COAL RESEARCH

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MAIN
READING ROOM

HEARING

BEFORE THE

SUBCOMMITTEE ON MINERALS, MATERIALS, AND FUELS

OF THE

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

UNITED STATES SENATE

EIGHTY-SIXTH CONGRESS

FIRST SESSION

ON

S. 49 and S. 1362

BILLS TO ENCOURAGE AND STIMULATE THE PRODUCTION AND CONSERVATION OF COAL IN THE UNITED STATES

JUNE 10, 1959

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COAL RESEARCH

WEDNESDAY, JUNE 10, 1959

U. S. SENATE,
SUBCOMMITTEE ON MINERALS, MATERIALS AND FUELS,
OF THE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to notice, in room 3110, Senate Office Building, Senator James E. Murray (chairman) presiding.

Present: Senators Murray, O'Mahoney, Moss, and Allott.

Also present: Robert W. Redwine, William Broadgate, and Robert Dwyer, professional staff members.

The CHAIRMAN. The subcommittee will come to order.

We have up for study today two bills, S. 49 and S. 1362. Both bills by their titles call for the encouragement, stimulation, and conservation of coal in the United States through research. But after the title, they part company.

S. 49 provides for the "creation of a Coal Research and Development Commission," while S. 1362 calls for giving authority to the Secretary of the Interior, acting through the Bureau of Mines, to enter into contracts with private organizations for conducting coal research projects.

The administration, through the Department of the Interior, is opposed to enactment of S. 49, but on the other hand urges the enactment of S. 1362.

I am advised by the chairman of the House Committee on Interior and Insular Affairs that that committee has reported out, with amendments, a companion bill to S. 49, but has taken no action in respect to a companion bill to S. 1362.

There appears to be unity in thought that there should be additional research in respect to coal by some governmental agency. The only division in thinking appears to be as to whether such research should be done by an independent commission created by the Congress or through the granting of contract authority to the Bureau of Mines.

I am sure that all members of the subcommittee share my thought that we should carefully hear the testimony of the witnesses who will appear today and possibly tomorrow in respect to these two bills so that the committee may be fully apprised of the arguments for and against this important matter being handled by an independent agency created by the Congress or through the regular channels of the Bureau of Mines.

Several Senators have advised me of their desire to appear in connection with this legislation, and in the interest of fairplay, I have scheduled them, insofar as possible, on the basis of seniority of serv-

ice in the Senate. As a result, the first witness will be Senator Dirksen. Senator Dirksen's testimony will appear in the record immediately following insertion of S. 49 and S. 1362 and the departmental reports thereon.

(The bills and reports are as follows:)

[S. 49, 86th Cong., 1st sess.]

A BILL To encourage and stimulate the production and conservation of coal in the United States through research and development by creating a Coal Research and Development Commission, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of American in Congress assembled,

SHORT TITLE

SECTION 1. This Act may be cited as the "Coal Research and Development Act".

DEFINITION

SEC. 2. As used in this Act the term "research" includes scientific, technical, and economic research and the practical application of that research.

COAL RESEARCH AND DEVELOPMENT COMMISSION

SEC. 3. (a) There is hereby created as an independent agency in the executive branch, a Coal Research and Development Commission (hereinafter referred to as the "Commission") to be composed of three Commissioners appointed by the President, by and with the advice and consent of the Senate. Not more than two of such Commissioners shall be members of the same political party. Two Commissioners shall constitute a quorum of the Commission. The President shall designate the Commissioner who shall serve as Chairman of the Commission.

(b) The term of office of each Commissioner shall be three years, except that (1) the terms of office of the Commissioners first taking office shall expire, as designated by the President at the time of appointment, one at the end of one year, one at the end of two years, and one at the end of three years, after the date of enactment of this Act; (2) any Commissioner appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term; (3) upon the expiration of his term a Commissioner may continue to serve until his successor is appointed and has qualified.

(c) Any Commissioner may be removed by the President for inefficiency, neglect of duty, or malfeasance in office, and for no other cause.

(d) The Chairman of the Commission shall receive compensation at the rate of $20,500 per annum and the other Commissioners shall receive compensation at the rate of $20,000 per annum.

(e) The principal office of the Commission shall be in the District of Columbia, but the Commission may carry out its duties under this Act at any place.

(f) The Commissioners shall be selected by the President from among persons experienced in the management of industrial-type research activities.

FUNCTIONS AND DUTIES OF THE COMMISSION

SEC. 4. (a) The Commission shall formulate and execute an overall research program designed but not limited to (1) develop new and more effective uses for coal, (2) improve and expand existing uses for coal, (3) reduce the cost of coal production and distribution, and (4) emphasize those developments in uses for coal of particular value to small coal producers.

(b) In carrying out its duties under subsection (a) of this section the Commission shall—

(1) conduct research projects;

(2) contract for, sponsor, cosponsor, and promote the coordination of research projects conducted by industrial associations, educational institutions, qualified nonprofit organizations, qualified private consulting firms and by other departments, agencies, and independent establishments of the Federal Government; and

(3) collect and promote the coordination of all available research information on the production, preparation, distribution, and uses of coal including, but not limited to, technical papers.

(c) The Commission shall itself conduct research projects only when it is unable on reasonable terms and conditions to contract or otherwise provide for such research to be conducted by any other qualified organization. No appropriation shall be made to carry out the purpose of this Act for any research project to be conducted by the Commission itself, if such research project has not been approved by resolutions adopted by the Committees on Interior and Insular Affairs of the Senate and House of Representatives, respectively. For the purpose of securing consideration of such approval the Commission shall submit to each such committee a prospectus on each such proposed research project containing, but not limited to, and analysis of, and justification for, such proposed project.

(d) No research shall be carried out, contracted for, sponsored, or cosponsored, or in any other way conducted under authority of this Act, unless all information, uses, products, processes, patents, and other developments, resulting from such research shall be available to the public generally. Whenever in the estimation of the Commission the purposes of this Act would be furthered through the use of patented processes or equipment, the Commission is authorized to enter into such agreements as it deems necessary for the acquisition or use of such patents on reasonable terms and conditions.

(e) The Commission shall, in carrying out its duties under this Act, cooperate to the fullest extent possible with all other departments, agencies, and independent establishments of the Federal Government and of State governments and with all other interested agencies, governmental and nongovernmental. The Commission shall not conduct any research under authority of this Act which duplicates research being conducted by any other department, agency, or independent establishment of the Federal Government or of a State government. In order to avoid duplication of effort, the Commission shall, before initiating any research under authority of this Act, consult with such departments, agencies, or independent establishments of the Federal Government and of State governments and such other interested agencies as it deems advisable, and establish that such research is not already being conducted.

(f) The Commission is authorized to acquire by construction, purchase, lease, or otherwise such real property as may be necessary to enable it to carry out its duties under this Act.

ADVISORY COMMITTEES

SEC. 5. (a) The Commission shall create, with the advice of the Attorney General, the Federal Trade Commission, and the Small Business Administration, such advisory committees as the Commission deems necessary to assist it in carrying out its duties under this Act.

(b) The functions of advisory committees established under authority of this section shall be purely advisory.

(c) The members of each advisory committee established under authority of this section shall be selected so as to insure adequate geographic representation, and, in the case of an industrial advisory committee, the members shall be selected so as to insure that an adequate cross section of the industry is represented. No corporation, company, association, or other concern represented on an industrial advisory committee shall control, be controlled by, or be under common control with, any other corporation, company, association, or concern represented on such advisory committee.

(d) Each advisory committee established under authority of this section shall be subject to the following minimum standards:

(1) The agenda for each meeting of such advisory committee shall be formulated or approved by a Commissioner or his designee who shall be a full-time salaried employees of the Commission.

(2) The meetings of such advisory committee shall be at the call of, and under the chairmanship of, a Commissioner or his designee who shall be a full-time salaried employee of the Commission.

(3) Full and complete minutes of each meeting of such advisory committee shall be kept, which shall contain at a minimum, (A) the name of each person attending such meeting, and an identification of the interest he represents, (B) a copy of the agenda, (C) a comprehensive summary of the matters discussed in the meeting stating the viewpoints expressed and identifying the person expressing such viewpoints, (D) the conclusions reached by the advisory committee, together with any minority views, and (E) a record of all votes or polls taken during the meeting.

(e) Copies of the minutes of each advisory committee established under authority of this section, and copies of all reports made by any such committee shall be available, upon request, to the public upon payment to the Commission by the person so requesting, of the cost of the United States of furnishing him such copies.

(f) Members of any advisory committee appointed from private life under authority of this section shall each receive $50 per diem when engaged in the actual performance of their duties as a member of such advisory committee. Such members shall also be entitled to travel expenses and per diem in lieu of subsistence at the rates authorized by section 5 of the Administrative Expenses Act of 1946 (5 U.S.C. 73b–2) for all persons employed intermittently as consultants or experts receiving compensation on a per diem basis.

EMPLOYEES

SEC. 6. (a) The Commission is authorized (1) to appoint, subject to civil service laws, such employees as may be necessary to assist the Commission to carry out its duties under this Act and (2) to fix the compensation of such employees in accordance with the Classification Act of 1949, as amended.

(b) The Commission is authorized to establish and fix the compensation for not more than ten scientific or professional positions in the Commission without regard to the Classification Act of 1949, as amended, each such position being established to carry out research and development projects conducted by the Commission itself which require the services of specially qualified scientific or professional personnel. The rates of compensation for positions established pursuant to this subsection shall not be less than $12,500 per annum nor more than $19,000 per annum and shall be subject to the approval of the Civil Service Commission. Such positions shall be in the classified civil service of the United States, but appointment to such positions shall be made without competitive examination upon the approval of the proposed appointee's qualifications by the Civil Service Commission or such officers or agents as it may designate for this purpose.

(c) There is hereby established a position to be known as the "Research Director". The Research Director shall be appointed by the Commission, and shall receive salary not to exceed $19,000 per annum. The Research Director shall administer all research projects conducted by the Commission itself under authority of this Act.

REPORTS

SEC. 7. The Commission shall submit to Congress, on or before February 15 of each year, beginning with the year 1959, a comprehensive report concerning its activities, including information on all research and development projects conducted, sponsored, or cosponsored by the Commission during the preceding year. In addition, the Commission shall submit to Congress on or before August 15 of each such year an interim progress report on its activities.

APPROPRIATIONS

SEC. 8. (a) There is hereby authorized to be appropriated, out of any money in the Treasury not otherwise appropriated, not more than $2,000,000 to be used to carry out the purposes of this Act for the fiscal year beginning July 1, 1958.

(b) There is hereby authorized to be appropriated for each fiscal year bebinning after June 30, 1959, such sums as may be necessary to carry out the purposes of this Act.

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington, D.C., April 13, 1959.

HON. JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
U.S. Senate, Washington, D.C.

MY DEAR MR. CHAIRMAN: This will acknowledge your letters of January 14, 1959, and March 13, 1959, inviting the Bureau of the Budget to comment on S. 49, a bill to encourage and stimulate the production and conservation of coal in the United States through research and development by creating a Coal Research and Development Commission, and for other purposes, and S. 1362, a

bill to encourage and stimulate the production and conservation of coal in the United States through research and development by authorizing the Secretary of the Interior, acting through the Bureau of Mines, to contract for coal research, and for other purposes.

S. 49 would create a Coal Research and Development Commission as an independent agency within the executive branch. The Bureau of the Budget endorses the objective of supporting a comprehensive program of research into coal production and conservation within the limitations imposed by overall budgetary objectives and requirements. However, the Department of the Interior, under the authority of existing law, already administers research and conservation programs involving mineral resources, including coal. To create a new agency in disregard of the accepted role of the Department of the Interior would disperse responsibility and unnecessarily add to the number of agencies over which the President must exercise direct supervision.

Other objections of the Bureau of the Budget to S. 49 of a more detailed nature include the limitation on the removal power of the President (sec. 3(c)); the possible delays resulting from the requirement that the Committee on Interior and Insular Affairs of the Senate and House of Representatives approve each research project by resolution before appropriations may be made (sec. 4(c)); and the overly rigid standards governing the utilization of advisory committees (sec. 5(d)).

The Department of the Interior's report to your committee on S. 49 and S. 1362 recommends legislation which would broaden the existing authority of the Secretary of the Interior to carry on coal research and development by authorizing him to contract for such purposes. The Department of the Interior favors the approach proposed by S. 1362, if amended, to vest the contracting authority fully in the Secretary of the Interior. This office concurs in this view.

The Bureau of the Budget recommends against the establishment of an independent Coal Research and Development Commission.

Sincerely yours,

PHILLIP S. HUGHES,
Assistant Director for Legislative Reference.

[S. 1362, 86th Cong., 1st sess.]

A BILL To encourage and stimulate the production and conservation of coal in the United States through research and development by authorizing the Secretary of the Interior, acting through the Bureau of Mines, to contract for coal research and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior, acting through the Bureau of Mines shall—

(1) develop through research, new and more efficient methods of mining, preparing and utilizing coal;

(2) contract for, sponsor, cosponsor, and promote the coordination of, research with recognized interested groups, including but not limited to, coal trade associations, coal research associations, educational institutions, and agencies of States and political subdivisions of States;

(3) establish technical advisory committees composed of recognized experts in various aspects of coal research to assist him in the examination, evaluation, of research progress on all research proposals and contracts and to insure the avoidance of duplication of research; and

(4) cooperate to the fullest extent possible with other departments, agencies, and independent establishments of the Federal Government and with State governments, and with all other interested agencies, governmental and nongovernmental.

SEC. 2. Research authorized by this Act may be conducted wherever suitable personnel and facilities are available.

SEC. 3. No research shall be carried out, contracted for, sponsored, cosponsored, or authorized under authority of this Act, unless all information, uses, products, processes, patents, and other developments resulting from such research shall be available to the general public. Whenever in the estimation of the Secretary of the Interior the purposes of this Act would be furthered through the use of patented processes or equipment, the Secretary is authorized to enter into such agreements as he deems necessary for the acquisition or use of such patents on reasonable terms and conditions.

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SEC. 4. (a) It is hereby authorized to be appropriated, out of any money in the Treasury not otherwise appropriated, to remain available until expended, not to exceed $20,000,000 to be used to carry out the purposes of this Act for the fiscal year beginning July 1, 1959.

(b) There is hereby authorized to be appropriated for each fiscal year beginning after June 30, 1960, such sums as may be necessary to carry out the purposes of this Act.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., March 27, 1959.

HON. JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
U.S. Senate, Washington, D.C.

DEAR SENATOR MURRAY: This responds to your request for the views of this Department on S. 1362, a bill to encourage and stimulate the production and conservation of coal in the United States through research and development by authorizing the Secretary of the Interior, acting through the Bureau of Mines, to contract for coal research and for other purposes, and S. 49, a bill to encourage and stimulate the production and conservation of coal in the United States through research and development by creating a Coal Research and Development Commission, and for other purposes.

S. 1362 would direct the Secretary of the Interior, among other things, (1) to develop through research new and more efficient methods of mining, preparing and utilizing coal, (2) to contract for, sponsor, cosponsor, and promote the coordination of, research with recognized interested groups, and (3) to establish technical advisory committees to assist him in a research program. It should be noted that this Department already has authority to conduct research programs within the Bureau of Mines. It does not, however, have authority to contract for research projects. S. 49 would create as an independent agency in the executive branch a Coal Research and Development Commission with responsibility to formulate and execute an overall research program. Such Commission would have research authority similar to that which this Department either already has or would be provided by S. 1362.

This Department endorses the objectives of the proposed legislation for encouraging and stimulating the production and conservation of coal in the United States through research and development. However, it is the opinion of this Department that these objectives can be accomplished more effectively through greater utilization of existing Government organizations rather than by the creation of a new agency. Existing agencies provide for a more appropriate degree of control by the Congress and the Executive over expenditure of Federal funds than is contemplated by the proposed creation of a commission. Furthermore, it is doubtful whether an independent commission would be effective if divorced from the major executive department having the basic responsibility for research in this field. For these reasons, we are opposed to the creation of an independent commission. We favor the approach proposed by S. 1362. However, we recommend that the language ", acting through the Bureau of Mines", which appears in the title and in lines 3 and 4 of page 1, be deleted to conform to the powers of delegation vested in the Secretary of the Interior by Reorganization Plan No. 3 of 1950 (64 Stat. 1262).

The successful conclusion of research programs will undoubtedly result in improving the economic position of the coal industry. This Department is in accord with the proposition of assisting the coal industry through research, and, through its Bureau of Mines, does conduct substantial research on safety, production, utilization, and conservation of coal.

Many projects, not presently under investigation, have been proposed for expansion of coal research activities both by Government and non-Government groups. There is no question but that much remains to be done in the field of coal research, and there is need for further development of new methods and equipment. To accomplish additional research activities, it is evident that additional Federal funds must be made available. This, in turn, implies a measure of strong Federal supervision of expenditures of such funds.

It is the view of this Department, therefore, that the basic objective of the proposed legislation would be accomplished more economically and efficiently through the use of existing technical and administrative staffs with contracting

authority provided by S. 1362, if amended to vest this authority fully in the Secretary of the Interior.

While we are advised by the Bureau of the Budget that there is no objection to the submission of this report to your committee, we are further advised that in the event of enactment that Bureau can make no commitment as to the submission of an estimate of appropriations for additional funds for coal research.

Sincerely yours,

ROYCE A. HARDY,
Assistant Secretary of the Interior.

The CHAIRMAN. Senator Dirksen, we are happy to have you here with us today.

STATEMENT OF HON. EVERETT M. DIRKSEN, A U.S. SENATOR FROM THE STATE OF ILLINOIS

Senator DIRKSEN. Mr. Chairman, I appreciate your kindness and the indulgence of the committee. May I say at the outset I have no pride of authorship about any measure. I am simply interested in results for a declining industry.

I note that a companion bill was introduced in the House, H.R. 6596, and was reported favorably on May 20. I believe they have a rule for an hour's discussion of the bill. It is presently on the House Union Calendar. The Rules Committee did grant it a rule, and I presume it will be taken up in the House at a rather early date. We have tried to get action in this field before.

You will recall that in the 85th Congress, I, along with yourself and Senators Barrett, Cooper, and Revercomb, introduced S. 4248, which was approved by the committee on August 12, 1958. That bill passed the Senate, and a companion bill was approved by the House committee and reported favorably to the floor of the House.

There was some objection when it was up for consideration on the Consent Calendar in the House, and, as a result, it received no action and died with the adjournment of Congress.

The House committee made a rather extensive report in connection with that bill, and they have made quite a fine report in connection with the companion bill which is now on the Union Calendar and soon to be considered.

I just reemphasize, Mr. Chairman, what I said before. I hope we can get some results in the research and development field for an industry that means so much significance to our whole economy, to our national defense, and which is obviously in difficulty. If anybody has any doubt about it, he needs only journey to Kentucky, West Virginia, or southern Illinois and observe some of the distress that has resulted from mine abandonment, for one thing, and the general distress in which the industry finds itself.

So I say to you at the very outset, my hope, my earnest hope, is that we can get some kind of a study underway adequately implemented where there is an opportunity to come up with some constructive results.

I start from the broad premise, Mr. Chairman, that the plight of the industry is actually nobody's fault, or it is everybody's fault. I think if we go back to a definition I heard of progress, we get the answer pretty well. I heard a man some years ago define progress as the constant and intelligent and undramatic application of life on what is here.

That is about the best definition I have ever encountered. Our difficulties are transitional so often and dislocative simply because of the application of life on the resources of this world. The atom has been here ever since the creation of the earth, but we didn't assembly enough scientific minds until 1944 and 1945, and implement their efforts with enough money to finally bring about the structural fission of the atom and make it a force that could end a war and give some great hope for peacetime power also.

It will obviously become competitive. Other resources, of course, are gas and petroleum. They have been here. It is only that fertile and fecund minds have applied themselves to it and translated them in terms of fuel and we have our difficulties.

So we make progress, one industry advances, one lags and falls behind. One type of fuel that has been so standard and so common for so long falls by the wayside under the impact of competitive fuels. That is nobody's fault. We try, of course, to compensate and to lift an industry out of its distress by what may appear to be rather restrictive, limited, short-range remedial measures, and too often they do no good.

I am quite familiar with all the efforts that have been made to bring about some restriction on the importation of residual oils, which would be competitive as fuel, or other types of petroleum products which would become competitive; or the efforts that are made oftentimes to restrict the outlets for other fuels like natural gas.

But manifestly, they will not be stopped if they are a part of the whole fabric of progress. As a result, we have to look elsewhere. I think our efforts are going to have to be more constructive. That means to find new uses, probably greater efficiency in the industry. But whatever we can determine and whatever we can ascertain on the constructive side will at long last become a durable rather than a temporary remedy. That is the thing in which I am interested.

I received a communication the other day from some people in the coal area in southern Illinois, asking whether or not the Public Roads Administration of the Bureau of Public Roads had taken judicial account of the possibility of using coal as a base for pavement, with particular reference to the highway program and the interstate system which is in process of construction.

It would appear that the engineers have done a good deal of research in this field, and had come up with a product derived from coal that might make a very suitable base for highway pavement. I am not too familiar with the process, but I did bring it to the attention of Mr. Tallamy, the director of the Bureau of Public Roads, and I noticed in his reply that one of the highway engineers was present at the Curtiss-Wright demonstration to indicate there is an interest, and that they are seeking uses of that type where you can get volume production.

That is only a sample of what we will have to look for in the field. It will take a good deal of constant and continued research to do it. I think there has been all too little in the coal industry. I think, and I say it in all kindliness, that there is something to the observation made in the House report this year, that the Bureau of Mines has always had something of a traditional approach.

I think this time it is going to use a maximum of imagination, and we are going to have to look into every possible field for an outlet for this resource if the coal industry is to be sustained and kept afloat.

It is in that respect not unlike some of our other minerals industries. You may recall I have appeared before this committee before, and testified on minerals bills and uttered some thoughts on the Senate floor. If and when the acuteness comes, and particularly where our survival is involved, you wouldn't have time to rehabilitate your industries. If they have gone to pot, it will take a long time to put them in an operational status. So it is with the coal industry.

What do we do in order to find new uses, greater economies and efficiencies in the industry itself that will keep it competitive with these other fuels, which are here? They are going to be here whether anybody likes it or not.

So we must launch out with high and bold imagination in this field if we are going to find a durable remedy.

Now with respect to S. 49 that I introduced with other cosponsors, there are only one or two comments that I wish to make. We set it up as an independent agency, or at least it proposed that. I know the objections to setting up other independent agencies in Government, for having lived long with this whole reorganization difficulty, having served on the first reorganization committee of the executive branch when I was in the House of Representatives.

I came through years of study in that field, and I know some of the objections. They are largely because you destroy certain lines of direct responsibility when you don't place it in a cabinet department.

I am not at all sure that I would object if this bill were amended to put it in the Department of Interior rather than as an independent agency. I leave that to the judgment of the committee. But speaking for myself, I have no real objection to it, because I think those lines of responsibility through our cabinet secretaries must, in large measure, be preserved. It makes for better and more responsive government, and it makes the load for the Chief Executive a good deal easier.

I make one other comment: The bill calls for an appropriation not in excess of $2 million. If the committee struck that and, in turn, provided alternative language, namely an open end authorization for an appropriation, and then let the amount be determined in due course after the appropriate representations are made to the Appropriations Committee.

Having served so long on the Appropriations Committee, both in the Senate and in the House, I know that is nothing more than a suggestive figure. In every case the subcommittees always listen attentively to the presentations made, the amounts that may be requested by the agency in question, and in that respect it is just as well to retain fluid and leave it open and say "there is authorized to be appropriated such sums as may be necessary."

That is quite a standard technique with respect to our authorizations. In respect of everything alse, I have no particular comment. The bill is rather wide in scope to provide research in every possible field in the interest of a lagging industry. I think in the main, Mr. Chairman, that about concludes my testimony.

I noticed the attitudes and the postures taken by different agencies in Government. It is customary, of course, to refer to the agencies of Government that might have an interest. There was no comment from the Federal Trade Commission.

I think that is a very appropriate comment, as a matter of fact, because it is a regulatory agency, for one thing, and I have found them ever willing to cooperate, and do whatever the Congress mandates in the statutes.

The Small Business Administration points out that coal is, in a sense, small business, and they favor the objectives of the bill but do defer to the Secretary of the Interior and the views that he expressed. The Civil Service Commission offered no objection, nor would they be expected to.

The Department of Justice had no recommendations to make. The Budget Bureau recommended against the establishment of an independent agency. That follows, I think, the general recommendations of the Hoover Commission. As I indicated, I do not quarrel very strongly with the position taken by the Budget Bureau.

The Department of the Interior endorses the objectives of the bill. They would prefer, I think, to have it within the Department of the Interior. The important thing is who is going to be the great moving force on a commission of this kind where you provide three commissioners and you have a director. If you get imaginative people, if you pay them well, if they have an interest in it, I think that argues for the success of a research endeavor like this.

That is where I would put the emphasis, getting good people, giving them the necessary authority, the necessary funds, coordination with all the interested agencies in Government, and let them go to work and see what they can produce. With that, Mr. Chairman, I commend the bill to your good mercies and your charity.

I am only interested in seeing something done for this industry. My own State has a vital stake in this industry. I have watched the progressive abandonment of coal mines in Illinois over a long period of time. I have watched the diminution in the number of miners, from an estimated 400,000 or thereabouts for the country, to a comparative handful today. It is a rather unhappy situation. I reemphasize the fact that it is nobody's fault.

But it will be our fault, I think, if we do not launch a sustained research effort in this field and seek to find the answer. The Lord put that resource here. It is so usable, it always has been. I am confident that we can find new uses for it, expanded uses, and still not bring any harm to any other competitive industry.

I thank you, Mr. Chairman, for the opportunity to come and just make these informal observations.

The CHAIRMAN. I thank you, Senator, for your very clear-cut and reasonable statement and advice. You may be sure that the committee, knowing of your long-time interest in this problem, will give very careful consideration to your suggestions.

Senator DIRKSEN. I thank you. We had a chance in the 85th Congress and missed only because we were late. We still have time enough, I am sure, in the present Congress. I foresee, Mr. Chairman, as minority leader, no early adjournment, and I believe there is still time for both House and Senate to act on this measure and get this research endeavor launched.

Thank you.

The CHAIRMAN. Thank you again, Senator.

Our next witness to testify is the Senator from Kentucky, Senator Morton. Senator, will you proceed?

STATEMENT OF HON. THRUSTON B. MORTON, A U.S. SENATOR FROM THE STATE OF KENTUCKY

Senator MORTON. Thank you, Senator Murray.

Mr. Chairman and distinguished members of this subcommittee, I appreciate very much the opportunity to testify today in behalf of legislation of the greatest possible importance to the coal industry of our Nation. The purpose of S. 49, of which I am a cosponsor, is to encourage and stimulate the production and conservation of coal through an independent Coal Research and Development Commission to be administered by the executive branch of the Government. I think you gentlemen are fully cognizant of the current depressed conditions in the coal industry and will agree that the industry is certainly in need of encouragement and stimulation.

The disturbing trends of recent years have prompted many of our economic forecasters and analysts to write off coal as a dying industry. I will agree only to the extent that the coal industry is hurting, but I will not concede that the wake is in the offing. Coal production has been marking time at rockbottom in the past few years. I am optimistic enough to predict that the time is not too far away when coal will start the upward climb to a level of prosperous stability, but I am not so unrealistic as to believe recovery will be suddenly spectacular.

The industry does not need a crutch simply to limp along at near-marginal levels. It needs, and desperately so, the assistance of a program administered with effectiveness and imagination to restore basic vigor and to shape a broad framework which will foster economic stability for the future. This I believe we would have in a dynamic research program.

Other industries utilize research as a fundamental tool in their operations. Our total national industrial base has burgeoned as new products and new applications derived from research have stimulated expansion of old industries and the establishment of new ones. Something like $17 million is applied each year to coal research. Undoubtedly, this money is well spent, but imagine what coal could have done, in 1953, for instance, with the $361 million expended by the chemical industry, the $280 million spent by the textile industry or the $146 million used by the petroleum industry, all for research. Expenditures of this magnitude certainly are not contemplated in the bill now before this subcommittee, but they dramatically illustrate the high regard other industries have for research.

S. 49 has a number of basic objectives. First and foremost, it would establish a research program to discover and develop new and better uses for coal. It would improve and expand coal's current uses, reduce the cost of coal production and distribution, and interpret these developments in relationship to their value to the small coal operators. In administering the program, the Commission would be empowered to conduct research projects, contract for, sponsor, cosponsor, and promote the coordination of research programs carried out by

others, and act as a clearinghouse for all available coal research information.

The research activities of the U.S. Bureau of Mines have been of great benefit to the mining industry, and the Commission will be prohibited from conducting research duplicative of work being carried out by the Bureau or any other Federal or State agency. The research work of the Bureau has largely been confined to long-range applied studies with very little activity being channeled toward the immediate or short-range problems of the coal industry. The Bureau has deliberately avoided undertaking research in areas already being investigated by private organizations.

A few of the larger companies which have had the financial resources to conduct research are to be commended for results leading to a greater range of end-product uses, but by and large the benefits from such research do not accrue to the industry as a whole. I am not in any way being critical of private industry, but rather I am expressing admiration of what can be accomplished through research when properly organized and directed, adequately financed, and concentrated on a definite objective.

The Bureau of Mines has indicated that our growing economy and expanding population will place a phenomenal demand on our energy resources within the next three decades. The transition of our economy with the past 20 years with its great emphasis on energy resources has subjected the recuperative powers of the coal industry to severe testing. Time and time again, coal has seen its traditional markets shift to competing fuels in such major cases as the dieselization of the railroads and expansion of oil and gas in both the industrial and home-heating markets.

I think it is inevitable that at some time in the future, possibly not so far distant as most people realize, we will see coal stepping into areas presently dominated by gas and oil. Our reserves of liquid and gaseous fuels are relatively limited while our coal reserves are estimated at more than 1 trillion tons—enough for a thousand years. Eastern Kentucky alone has reserves estimated at 35 billion tons. Considerable research has already been done in the field of extracting liquid fuels from coal, but the capital investment required to place extraction on a production basis makes the cost of the product uneconomical from a customer point of view. Similar work has also been undertaken on the underground gasification of coal.

Coal already is an important ingredient in many of our modern-day products. Although the volume is rather small, coal is used to make varnish, artificial silk, fingernail polish, ammonia, insecticides, explosives, dyes, baking powder, cosmetics, aspirin, synthetic rubber, and plastics. This is only an extremely modest list of the many useful and valuable products derived from a coal base by research.

The opportunity for coal to benefit from new and more effective utilization and to strengthen its position in traditional markets is exceptionally bright if given the proper vehicle. I believe we would have the proper stimulus in the form of a vigorous research program directed toward specific and short-range objectives. Many of the coal industry's troubles have been compounded by the uncertainties of the future. This is especially true in the case of the average coal

operator who will continue to look disaster squarely in the eye unless he is assured of a more permanent and stable participation in the coal marketplace. As it stands today, he has no such assurances and, consequently, is discouraged to look no farther ahead than tomorrow.

The coal industry has always been one of the primary energy sources in our tremendous industrial economy. It has responded to the challenges of national emergencies, but in peacetime it tends to be shoved into the back seat and treated rather brusquely by natural factors over which it can exercise little control. Only through reasonable recovery to a level of permanent stability can the coal industry even hope to achieve any degree of prosperity and its parallel freedom from widespread unemployment and the usual serious economic dislocations attendant to a depressed status. While I have been viewing coal research in the light of its hope for the coal miner and his community, I would not overlook the benefits which will also accrue to the coal customer and the general public.

Scientific research has been one of the mainsprings of our Nation's tremendous rise to eminence in the world family of nations and it will continue to help maintain that position of leadership. In the interest of coal as vital to our national welfare, security, prosperity, and progress, I think it is entirely appropriate for the Federal Government to participate as a partner in this critical research area where its activities would broaden and supplement, not substitute for, the initiative of private industry. The entire industry, large and small producers alike, would share in the gains.

I, therefore, urge this subcommittee to take favorable action on S. 49.

Senator MURRAY. Thank you, Senator Morton.

Mr. REDWINE. Mr. Chairman, I would suggest that Mr. Owens be the next witness, in view of the fact that none of the other senatorial witnesses are present.

The CHAIRMAN. Very well.

Mr. Owens, will you take the stand, please?

STATEMENT OF JOHN OWENS, SECRETARY-TREASURER, UNITED MINE WORKERS OF AMERICA

The CHAIRMAN. You may state your name and your position, and whom you represent.

Mr. OWENS. Mr. Chairman, members of the committee, my name is John Owens. I am secretary-treasurer of the United Mine Workers of America. I would like to extend to the committee my appreciation for the opportunity to present the views of the United Mine Workers of America on this important subject.

Coal is now, and will be for many years to come, one of America's dependable basic industries. The growth of America as an industrial nation is directly parallel with the growth of the coal industry as a major source of energy. Coal's position in the energy field must be maintained if America is to be secure in time of war and prosperous in time of peace.

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Byproducts of coal, 200,000 at the latest count, touch the American family's life a thousand times a day: Vitamins, insecticides, aspirin, drugs, phonograph records, dyes, paints, synthetic fibers, weed killers, cleaning fluids, fertilizer, film; the list is nearly endless. Yet, the potential use of coal and its byproducts through research have scarcely been touched, and this research can only be done through the utilization of Government funds.

The coal industry and its several component agencies have embarked on a research program costing hundreds of thousands of dollars; but due to its technological advancement, an increase in production per man per day of 78 percent, and the resulting stable price of coal over the last 10 years, the industry's funds for research are somewhat limited.

Within the past 6 months, several proposed uses for coal have been brought to the attention of the United Mine Workers. Each of these represents a potential increase in coal's markets, and a greater utilization of one of our most basic natural resources. For a moment, I would like to outline some of these projects to indicate the scope of coal research and the many products and processes which may be investigated.

Low temperature carbonization of coal is a process to draw off the chemical components of coal by subjecting the coal to measured amounts of heat. There is in existence an actual operation of this type at Cresap, W. Va. This method of coal utilization assures almost maximum consumption of the coal. After the chemicals are extracted, the remaining char is burned in a utility plant to generate electricity.

I refer to Senator Dirksen's reference to the highway program. Those people interested in the Federal highway program should be interested by a recent news announcement that the Curtiss-Wright Corp. has developed a road surfacing material made from bituminous coal. The project presents the coal industry with a vast new potential market in the years ahead. But much research and development work will have to be carried on first.

There is one area of research and development which is of particular importance to our country. I refer to the manufacture of petroleum and gas from coal. The time is fast approaching when America will have to turn to the manufacture of these valuable products in order to supplement a fast dwindling supply. There are several methods of doing this. Further work should be undertaken in preparation for the time when economic necessity will dictate that our petroleum industry must expand beyond its capacity to produce.

These examples are used merely to emphasize the vast scope of bituminous coal research. The basic product is so versatile and so adaptable, that our Nation may well come to rely on coal as the basis of economic growth.

The United Mine Workers of America feels strongly that coal now powers America's progress; that coal will continue to power America's progress for generations to come. Therefore, we strongly urge

that our Government undertake such research and development in coal as the public good dictates.

Assuredly, we are not asking too much when we seek the same consideration now accorded by our Government to nuclear energy, which has yet to be justified economically.

We ask help in the expansion of coal's market.

We ask through coal research those economic and safety guarantees to our Nation in time of war and in time of peace that we owe the peoples of this Nation.

We further ask that our Government recognize the present and the future basic dependence of this Nation on the economy of coal and coal's proven ability to provide a tremendous energy source; and, also, adequate raw materials in the chemical and manufacturing fields.

In order that these proposals can be carried out coal mines must be in constant production through expanded markets. Idle and abandoned mines cannot guarantee the economic stability of this Nation. Abandoned mines take years to reopen and cannot meet the huge needs of industry in time of war.

Our Goverment's investment in coal research will pay huge dividends in this Nation's future economy and safety by maintaining a producing and expanding coal industry.

We appear here today on behalf of Senate bill S. 1362, and we strongly urge its passage. As you are aware, S. 1362 places responsibility for research in the Bureau of Mines. Since the Bureau of Mines has in the past conducted much research work in coal, it is our considered opinion that the greatest good will be accomplished if the Bureau is empowered to carry on the expanded and more diversified research activity.

We, Mr. Chairman, feel that the U.S. Congress should take into consideration the necessity of protecting one of the greatest resources there is in America. Coal is indispensable, indirectly, to every man, woman, and child in America. If some unexpected emergency would occur, we are fearful of what would happen if we weren't able to produce and market coal, as it will surely be required in the event of war.

It is like Senator Dirksen said, it is true that the industry at one time employed 500,000 or 600,000 men. In fact, in the First World War, it employed nearly 700,000 men. But due to the cooperation of the United Mine Workers of America and its membership, and the invested capital in the industry, it has been modernized until the production per man-day today is over 11 tons per man per day.

In other countries where they have been producing coal for 200 or 300 years the production per man-day is just a little over a ton per man.

In all of those countries, Great Britain, Germany, France, in Russia and in China, governments have encouraged the expanding markets of coal. They have lent every assistance possible to research and modern methods, to encourage methods of extracting coal, so that they can increase the production per man per day.

In America, I think that the coal industry is the only industry that never asked the Government for any financial assistance during

the last two wars. It produced the Nation's requirements; and 158,000 of its employees went into the armed services.

Yet the Nation's supply was met. Since the end of the war there has been a reduction, a tremendous reduction, in the demand for coal. But instead of being a dead industry, in years to come we look forward to the industry producing twice as much coal as they produced in the year 1957.

We believe with the increased population in this country, according to the estimate approximately 50 million more people, that there will be a great demand for coal. This industry must be kept in a position to meet every demand made upon it by the population of our country in the event of an emergency.

We feel that the Interior Department, with its years of experience, is the Department that is more familiar with the coal and mineral resources than any other department in our Government or any other agency that can be established. I am glad to know that there are no objections to creating this research group. The only question is, What department shall man or administer it?

Well, that seems to us to be a minor question that can be resolved. The United Mine Workers of America are hoping that the Congress will adopt this into law and place it in the Interior Department because of its long experience in the coal industry. We think you can get it adopted and approved more quickly by agreeing to that than to attempt to establish a special commission.

On behalf of the United Mine Workers, Mr. Chairman, I wish to thank you for this opportunity to state our views on this vital subject, and we hope that in the near future there will be enacted a law for this research department to be set up and that it will be successful.

Thank you, sir.

The CHAIRMAN. Thank you, Mr. Owens, for your very able and enlightening statement. I am sure the Congress will give heed to the recommendations you have made. I am sure we all recognize the importance of this program that we are seeking to establish. I look forward to successful action on it.

Mr. OWENS. Thank you, sir.

Senator MURRAY. I see that Senator Byrd of West Virginia, is now present. Senator, will you present your statement?

STATEMENT OF HON. ROBERT C. BYRD, A U.S. SENATOR FROM THE STATE OF WEST VIRGINIA

Senator BYRD. Mr. Chairman and members of the subcommittee, early in this session of Congress, nine of us joined with the distinguished minority leader in introducing S. 49. That bill would encourage and stimulate the production and wise use of coal in the United States through research and development by creating an independent Coal Research and Development Commission in the executive branch of the Government. I shall return later to a discussion of the makeup, as well as the duties, responsibilities, and functions of the proposed Commission.

Some of you, not from major coal-producing areas, may be wondering why those of us who are from coal areas, should be so seriously interested in a new deal for coal research. There are several good

reasons for our intense personal interest. These are perhaps even better reasons why the people of the United States, the U.S. Government, and especially the Congress of the United States should be vitally interested.

First and foremost is the fact that coal is one of our truly great natural resources. Useful though it has been in the past two centuries, its promise for the future, for hundreds if not thousands of years ahead, is truly fabulous. Not only is it relatively widely distributed and of a considerable variety of types and qualities, but it is also abundant. There are at least 27 States with important reserves. Remaining U.S. coal reserves of all types amount to about 1,900,000,000,000 tons. Just count all of those zeroes—it means nearly 2 trillion tons. Of that amount, something like one-half, or about 950 billion tons, are estimated to be recoverable. That is 950 billion tons. At present, in most periods, 1 billion tons serves the United States for all uses, including coal's part in powering the world's top industrial machine, for about 2 years. You can see that even if we step up usage substantially, there is a large enough reserve of coal estimated to be recoverable to last a long time. Technology now in the experimental stages may make it possible to utilize some narrower veins not now recoverable.

There is so much of it that there seems little reason to burden you with figures on estimated reserves in particular States. Lignite and semibituminous types are particularly abundant in certain areas in the western half of the country. Illinois, Kentucky, West Virginia, and Pennsylvania are especially well supplied with bituminous reserves. Anthracite coal is still another matter. Really, what I am emphasizing is not only that we have very large amounts of coal in reserve, but that it is a diverse substance from place to place and age to age; information on some aspects of many coal formations or "measures" is still largely sketchy and inadequate, if not entirely unavailable.

We might even go so far as to say that, fortunately, it is not a simple substance but of many grades and ranks. It is a highly complex macromolecule, composed of varying amounts of liquid hydrocarbons, solid carbon, deleterious elements such as sulfur and inert materials or ash. If we want to be somewhat more technical, we can describe the hydrocarbons in coal as ring-shaped compounds, known as aromatics, that lie loosely in a hexagonal lattice structure, much after the pattern of a chicken-wire mesh.

Broadly speaking, based on present knowledge, there are four levels of elements in coal which are important in the industrial world. First, there is the level of relatively cheap hydrocarbon gases, which are used for the production of aliphatic chemicals, ethylenes, acetylenes, etc. The volume of production of these gases can be varied through engineering processes. Second, there is a small range of solids, such as pitch, which can be turned into high-grade metallurgical coke, an increasingly scarce item. Third, there is a wide range of medium-priced volume chemicals, such as benzene, phenol, naphthalene, cresols, and analine which can be used in a variety of products such as plastics. Finally, there is a great range of heretofore little-used and high-priced chemicals such as acenaphthene and indole. In the fly ash of bituminous coals there have been found many of the rare-earth minerals; notably among them is germanium; but nickel and

many other elements could be extracted. Great potential uses for at least some of coal's constituents are anticipated by coal researchers—uses which will be highly beneficial to the national economy and to the standard of living of the United States.

That, I say, is based on present information. We just don't know very much about coal yet, in spite of having made some use of it for most of two centuries.

To quote from a very recent authoritative statement:[1]

> The subcommittee finds that so little is known about coal, including such fundamental factors as its origin, composition, properties, and chemical behavior, that opportunities for research leading to the most effective and efficient utilization of this great resource are almost unlimited.
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> Considering the complex nature of coal and of the problems faced by the coal industry, the amount of research and development work conducted in the past has been pitifully inadequate. The coal industry is decades behind the petroleum and other growth industries in research and development.

That, gentlemen, is a primary reason why we must have increased coal research. It is a versatile raw material. It will not only serve as a fuel; but more important, in the long run it will support other uses and offer benefits almost unlimited, if only we will take adequate steps to learn more about it, its nature, especially its chemical nature, and the many possible derivatives. That is the great glorious future of coal, if only we are wise enough to explore it and develop it. The western frontier of our youth may be gone, but the research frontier is just beginning to open up.

I would not have you think that there are no other major reasons for stepped-up coal research. The coal industry is at present a depressed industry. Some have called it a sick industry. There are several reasons for its trouble—most of the reasons appear to be short term, but the results are nonetheless painful. Fuel uses of coal have been in part displaced, not so much absolutely as comparatively. Illustrations come to mind not alone from transportation and home heating, but from industry.

In 1947 coal still supplied about 50 percent of this country's total energy supply. Now it is down to 25 to 30 percent of the total. Railroad transportation, which at its peak required about 150 million tons per year, has been almost completely lost. The use for home heating is nearly gone. Metallurgical requirements have increased. Use of coal in generating electric power also has increased substantially; since 1947 the increase in this use has absorbed about 70 percent of the railroad transport loss.

With the exception of the waterpower, the competitive liquid hydrocarbons and natural gas are exhaustible resources—not this year or next, but apparently in, at most, a few decades. Coal reserves, you will recall, are measured in centuries at least. But the short-term effects of decreased use on the coal industry, in terms of unemployment, bankruptcies, low incomes, family distress, and even withered communities, are overwhelmingly disastrous.

This can be documented in community after community in my State and in several other States. Possibly a majority of the communities

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[1] "Findings and Recommendations of the Special Subcommittee on Coal Research," report of the Committee on Interior and Insular Affairs, House of Representatives, Rept. 1263, 85th Cong., 1st sess., Washington, 1957, p. 60.

now officially designated as labor-surplus areas, core areas of distress, for which concentrated effort will presumably be made under the area redevelopment proposals, if ever we should have an adequate program of that sort, are basically coal-depressed areas.

In 1957 there were 8,539 bituminous coal mines in operation; in 1958 there were 7,588 such mines producing. Production was down from a peak of about 631 million tons in 1947 to about 493 million tons in 1957, and a preliminary estimate of about 400 million tons in 1958. Average daily employment declined from 228,000 in 1957 to about 190,000 in 1958. In West Virginia a decade or so ago there were about 125,000 miners employed in bituminous coal; in 1957 it was about 57,000; now it is more nearly 48,000 or even fewer.

It has been a period of rapid mechanization—so coal produced per man-day has risen sharply. By comparison with other important producing countries, our mines are very efficient in terms of man-hour coal output. Mines have been closed; companies have consolidated; production has been concentrated on the thicker, more easily mechanized veins.

There are those who hold that time will solve the problem—that petroleum and natural gas will become scarce and high priced, that population will grow vastly. Such complacency is not for me. If the coal industry is to be a strong, vital, efficient supplier of this country's needs in 1975 or the year 2,000, it must first solve its present problems of growing up and living so as to survive what is currently a near crisis in its economic condition.

A good case can be made out that the long-term interest of the Nation with respect to coal coincides with its short-term interest. This industry contributes something like $5 billion annually to the national economy and supports, directly or indirectly, something like 2 million people. Shipments from mine to market account for about $2 billion of the revenues of carriers. Twenty-one States have a producer's interest in coal. These are big figures; the interest is nationwide, but in its broader sweep is relatively impersonal. For some of us the situation becomes pathetically personal.

The coal mining town and surrounding countryside all too often is a one-industry affair; when the one, two, or more coal mines close down, or even curtail operations for lack of orders, the whole community suffers. And, if the State has many such coal communities, the State finds itself hard up.

Meanwhile, only a relatively small percentage of the total coal production is used as chemical raw material—that is the rainbow on the horizon, the promise of rejuvenation, of new life in a depressed industry. Research, more research, is the magic word, the vital catalytic agent in transmuting the gross black lump into sheer fabric or potent drug, or any one of a thousand items we need and could and would use. The shift toward increased use of coal in the chemical industry would seem to be indicated in any case. Only by speeding up the process with a crash program of effective research can the distress be relieved within anything equivalent to the present working life of many of those who are now unemployed. They are not trained for other work and are, in many instances, perhaps too old to shift elsewhere. If, as some anticipate, atomic power, or some other new breakthrough on the energy supply front should be anywhere near at hand, it is even

more necessary that coal research, particularly with respect to chemical uses, should proceed full speed ahead, if the distressed industry is not to find itself overwhelmed with utter ruin. As a raw material for many important chemicals, it might indeed prove to be of more worth to man than as a fossil fuel—but, if it is to serve the new chemical age, we must know more about it, its chemistry and the commercially feasible derivatives thereof, all within a relatively short time.

S. 49 would provide a crash program of research and development for the coal industry. That bill is not, however, something which has been put together in a hurry. In essence it dates back at least as far as the careful work of the Special Subcommittee on Coal Research in 1957. Our chosen instrument for this crash research program is an independent commission of three members experienced in industrial-type research. They would be appointed by the President, with the advice and consent of the Senate, for 3-year terms, except that initial appointments would be staggered to provide some continuity. Removal would be by the President, only for specified causes. Pay would be in line with that accorded more or less equivalent Government positions.

Duties and functions, insofar as they are spelled out in S. 49, are broad, falling generally in the "formulate," "develop," "execute," "activate" categories. In other words, they are to get a job done. The job as noted in section 4 is an overall research program designed but not limited to—

1. Develop new and more effective uses for coal.
2. Improve and expand existing uses of coal.
3. Reduce the cost of coal production and distribution.
4. Emphasize those developments in uses for coal of particular value to small coal producers.

The scope of the methods and activities which the Commission might use would include actually conducting research, but only when it is unable on reasonable terms and conditions to contract or otherwise provide for such research to be conducted by any other qualified organization. Though provision is made for a staff insofar as it may prove to be necessary, emphasis obviously would be upon contracting, and upon coordination of available research information. All information resulting from the contracts and otherwise, including patents, would be in the public domain. Initiation, cooperation, coordination, and avoidance of duplication are key concepts. Cooperation with industry and with other governmental agencies, whether Federal or State, is emphasized. The Commission is given authority to create such advisory committees as it deems necessary, with some advice thereon from the Attorney General, the Federal Trade Commission, and the Small Business Administration. Such advisory committees would be purely advisory, but nevertheless some rather detailed provisions are included as to representation thereon and operation procedures thereof. The proposed authorization as to funds would be related to such sums as may be necessary to carry out the purposes of the proposed act.

Some may well ask why we do not get the job done by the Bureau of Mines. I think we have to agree with the Coal Subcommittee, in its summary of the situation, which was in essence that the Bureau of Mines has performed much valuable and outstanding coal research

work but that a relatively small amount of it has been directed toward assisting the coal industry as a whole with its immediate or short-range problems.

Perhaps this scientific "fixation" of the Bureau may be illustrated by quoting from the appropriations hearings for fiscal 1960 with respect to recent accomplishments:

> In the bituminous coal program, during the past year, advances were made in both the Fischer-Tropsch and coal-hydrogenation methods of producing gases and liquids from coal. New sources of coking coal were determined and advances made in the technology of low-temperature carbonization and coal gasification. The program also provided coal analyses that served as the basis for all Federal coal purchases, developed new analytical techniques, described new coal mining and preparation techniques, and provided detailed data and trends on production, distribution, and utilization of bituminous coal, coke, and related commodities. The safety of permissible explosives was assessed, and research was conducted on the explosibility of gases and dusts and in the experimental coal mine on incendivity of explosives and methods of fighting mine fires.
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> Under the anthracite coal program, several cooperative mining research projects have shown such encouraging results it is felt that from them will emerge new mining techniques which will substantially improve safety conditions and reduce costs by increasing output per man-day. Preliminary tests were made on determining the most efficient method of cleaning fine-sized anthracite, for which substantial new markets are being developed in the metallurgical and chemical industries.[2]

With respect to the year ahead, the new budget requests $6,216,000 for the conservation and development of bituminous coal by the Bureau of Mines, as compared with $6,110,000 in the current fiscal year and $5,929,714 in the previous year. For anthracite conservation and development the request is $938,000, as compared with $930,000 in fiscal 1959 and $816,000 in fiscal 1958. The only changes in program specifically mentioned for fiscal 1960 are as follows:

> The research program on underground gasification conducted at Gorgas, Ala., will be discontinued in 1960. The funds will be used to work on hydraulic transportation of coal from face to tipple, prevention of formation of acid mine water, degasifying coalbeds, and study of the performance characteristics of commercial coal-cleaning equipment.
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> No other major changes in the conservation and development of mineral resources program are contemplated.[3]

That isn't useless work, nor does it lack considerable significance. Yet it would seem clear enough that it has not rendered assistance to most coal producers in solving their major short-range problems—that of maintaining and expanding existing markets and creating new markets for coal.

Nor does it provide the crash program emphasis on coal as a chemical industry raw material which we estimate is needed now.

It should be noted that at the time of the 1957 Coal Research Subcommittee hearings the Bureau of Mines did indicate that they could increase their research program immediately, without first acquiring additional laboratory space, to utilize an additional $1 to $2 million per year, and over a 3- or 4-year period to utilize as much as $4 million more per year, if qualified professional personnel could be obtained.

Perhaps we can summarize this part by saying that, as might reasonably have been anticipated, the Bureau of Mines has not been inclined to look with favor upon the proposed independent Commis-

[2] U.S. House. Hearings, Subcommittee of the Committee on Appropriations, 86th Cong., 1st sess., 1959, p. 236.
[3] Ibid., p. 237.

sion. The Bureau would have research and development programs expanded through projects carried out individually and separately by the Federal Government (with special reference to conservation, basic science, health and safety, etc.), and by private interests, using independent sources of funds, to develop commercial applications. We can only say that their approach has not given the results we must have.

At that point there will be those who ask why the coal industry does not do its own research. A brief answer is that it appears to have done so within existing limits, but again, not enough. Non-Federal research groups are credited with having contributed significantly to most phases of coal research; universities, trade associations, private nonprofit organizations and the industry itself are aware of certain problems, have made contributions thereto and are still working. For example, the Special Subcommittee on Coal Research stated that excellent progress has been made and continues to be made by equipment manufacturers in developing improved mining and coal-burning equipment with resultant lower mining costs and increased economy in the use of coal. Some significant advances have been made in coal preparation and in other phases of coal technology.

These groups certainly represent substantial research facilities and abilities which we may presume would be additionally activated and utilized, under contract, by the proposed Commission. Yet it is perfectly obvious that they have not, under existing conditions, been able to inaugurate or carry out the crash program of research which is needed. In part this too is a matter of basic orientation, though it would appear that finances too have been a bottleneck. According to the latest information only about $17 million was channeled into coal research in 1955—of which the Federal Government provided less than $5 million. In comparison, research expenditures in 1953 in petroleum were estimated at $146 million, and in the chemical industry, at $361 million. This reflects the fact that earnings in the coal industry have long been poor in most years. One survey of some of the largest, hence, presumably the most efficient coal mining companies, indicates that stockholders got only 15 cents per ton for the product, low even by comparison with the 30 or 40 cents per ton which went into the welfare fund for the miners. We may wonder which part of the low-earnings, starved-research situation is cause and which effect. Only a crash research program is likely to provide the bootstraps to rescue this vital industry.

We know that our agriculture is not without its problems; but we also know that it is the envy of the world's leaders and farmers, a most significant aspect in which the U.S.S.R. finds itself almost hopelessly behind. What agricultural research in its several aspects has done for the farmer and the consumer, the proposed Coal Research Commission can undertake to stimulate on a somewhat comparable basis for coal. The independent Coal Research and Development Commission is the only type of coal research legislation which apears to have met with the approval of most who are interested in coal—with both the management and the labor of the industry. Reservations or suggestions, other than those by the Secretary of the Interior, have been mostly of a perfecting sort. It is time to move full speed ahead on a real research program for coal.

Senator MURRAY. Thank you, Senator, for your fine presentation. The next witness will be Fred Bullard, executive director of the Kentucky Coal Association. Proceed please.

STATEMENT OF FRED BULLARD, EXECUTIVE DIRECTOR, KENTUCKY COAL ASSOCIATION

Mr. BULLARD. Mr. Chairman and members of the committee, My name is Fred Bullard and I reside at Hazard, Ky. I am executive secretary of the Kentucky Coal Association, whose members account for the majority of the coal production in eastern Kentucky.

I appreciate the opportunity to appear before you and to express the views of my organizations with respect to S. 49. I will endeavor insofar as possible, to eliminate duplication of the testimony of others who have appeared or will appear before you, particularly as concerns the need for an effective coal research program.

I do not think there is any doubt in the minds of anyone concerned, either directly or indirectly, as to the need for a vigorous and healthy coal industry both now and in the future. An adequate research program will play a major role in reaching such an objective.

As I stated a moment ago, I came from eastern Kentucky which is one of the regions of our Nation which has been the subject of considerable concern to the Congress because of its depressed economic condition. We are, for all practical purposes, a one-industry area, whose economic health rises and falls in direct proportion to the condition of the coal industry.

We have much uemployment among people whose lives have been devoted to mining coal and who have no other employment opportunities. These people do not seek Government handouts of food and other forms of public assistance. Rather, they want jobs, and jobs are available only if there is a high demand for coal. While I refer primarily to the region in which I live, it is by no means the only coal mining area in which these conditions exists.

I call attention to these economic conditions because they point up very forcefully the urgent need for immediate short-range research to enlarge the uses and thereby the demand for coal. I dare say that an annual market demand for 100 or 200 million tons above present coal production would solve most of the economic problems in the Nation's coal fields.

I must emphasize here that the increased demand for coal, at whatever level is necessary for solving the economic problems, must be a stabilized demand. Historically, the curve of the condition of the coal industry has been a continuous series of peaks of optimism followed by drops to the valleys of despair. This is not a pretty picture nor a healthy one, especially for a basic industry which should always be ready to immediately fulfill the demands placed upon it in the event of a national crisis. The industry has performed admirably under such conditions in the past.

It must be ready and capable of doing so in the future. This can be accomplished only by increased and stabilized production in normal times. Research is the key which will open the door to the increased coal production necessary for the economic stabilization of this vital industry. But above all the need for research, especially that of a short-range nature, is now.

Now, how can such a research program be best accomplished with emphasis on speed and efficiency? There are varying views on this subject, and I want it clearly understood that the position we advocate is in nowise intended to reflect discredit upon any who support a different approach. Maybe we are right, maybe not; but, right or wrong, we submit it for the committee's consideration.

We believe there are advantages to be gained in delegating the authority and responsibility for a coal research program, with both short- and long-range objectives, to a new, independent commission. It should be a commission whose sole reason for existence and whose only area of operation is research; a commission which can act with whatever degree of expediency is necessary, without having to process matters through departmental channels which more often than not, results in the loss of time which could be used for constructive accomplishment.

We feel, too, there is merit in a new group taking a look at any given matter in the field of research. There are probably hundreds of cases where new processes or new products were developed because the research people were not restricted by the knowledge of past research failures by others. I think there is a lesson in the radio and television commercials used by a cigarette manufacturer with the theme: "They said it couldn't be done."

Let me give you a good example of what I am trying to say:

Recently, the Curtiss-Wright Corp. announced that it had developed a process in which coal was used to manufacture a highway pavement binder. As a matter of fact, 2,000 to 2,200 tons of coal are needed to make enough binder for 1 mile of highway. In addition, the char which remains after the coal is processed is usable to fire electric utility and other boilers.

I don't need to tell you that Curtiss-Wright is not now, nor has it ever been in the coal business. Why did they get into this research with coal?

A few weeks ago, I had an opportunity to discuss the matter with Dr. Minard W. Stout, vice president of research and development for Curtiss-Wright. He told me that when they were making arrangements to build their $20 million research center at Quehanna, Pa., they told State officials they wanted to do something to help Pennsylvania's economy.

In determining the research area to fulfill this promise, they decided the coal industry was most in need of help. They were told by others that previous efforts in the field of paving materials from coal had been unsuccessful. But they did not let past failures stop them. They started with a new look and met with success at the laboratory level and are now preparing to test the product under actual highway conditions.

They said it couldn't be done, but it was. This same experience might be duplicated many times in other areas of coal research. All of it adds up to a greater demand and use for coal.

Summarizing, the Kentucky Coal Association urges the program of coal research as proposed by S. 49; and further, that such program be implemented with the necessary tools to act in keeping with the need for speedy, effective, and efficient research which will help to stabilize one of the Nation's basic industries and its most dependable and plentiful sources of energy.

Thank you for the time you have provided for our organization to be heard.

The CHAIRMAN. Thank you very much for your statement.

Are there any questions?

Senator O'MAHONEY. I am sorry that I was delayed. I have no questions at this time.

The CHAIRMAN. Senator Allott?

Senator ALLOTT. Mr. Bullard, I think your statement is a very fair and a very honest statement of the situation as you see it. As you pointed out, and as our chairman pointed out in his opening statement, there are some differences of opinion as to how this can be handled.

Do you not think, referring particularly to the arguments used on page three of your statement, that if we intended to look wholly to the Government for this and for all research, we may be putting ourselves in a bind where there will be a tendency to limit research by private organizations?

I mean, if you follow through your argument that this can only be done by an independent agency, here you have the Curtiss-Wright agency which has gone ahead on its own. I can see regardless of which way the Government program in research would go, that every company that has a possible advantage to gain from the research in this field is going to utilize it anyway.

Are they not?

Mr. BULLARD. I think that is right.

Senator ALLOTT. In other words, while it is not generally talked about back here in the East so much, because we are a long ways away, in the Colorado plateau alone there is enough coal to last this country some 250 or 300 years. We have a very great interest in this area. We have the mining fields of Florence and Canyon City, which have been substantially closed down. We have the very, very great mining areas around Walsonburg, which is in Huerfano County, which are, to a great extent, closed down; the Trinidad area, the Valdez area, all of which contain some wonderful coking coal.

We just do not have the demand for the use of this coal in the United States. It can only be obtained through research. To me it isn't just a matter of finding new ways of burning coal. This is just one area.

My brother, who happens to be chief chemist for the C.F. & I. in Pueblo, for the coke plant and research byproducts division, has told me many times of great areas which he thinks might possibly open up in research for coal.

The real point, it seems to me, and my own thinking on it, is that first of all I am very reluctant to open up new commissions, which also means opening up all the administrative machinery, the overhead of office space and all of that which go with it, and which tend, under our Parkinson's law, to about double the cost of anything you do.

You realize this must be approached with a fresh view, a fresh outlook, an independent outlook, an objective outlook. But, on the other hand, there is not any reason, either, for discarding the accumulated experience and knowledge of the Bureau of Mines.

Mr. BULLARD. I agree with you 100 percent.

Senator ALLOTT. You have to weigh these two things against each other. I realize that your point of view is a little different from mine, but I think it is a completely honest one, and one which should

also be considered. I do not agree with it personally, but it is a very good point.

Mr. BULLARD. With respect to your first question, let me say that my thinking with respect to an independent commission is that they would plan and direct a research program that would not necessarily eliminate research by private concerns. I see it as a program in which specific areas of coal research could be farmed out to universities, to private research groups.

But it is controlled in its overall plan by a group who are taking a fresh look. I certainly say that it would be a terrible mistake if any commission was established which would completely disregard the research which has been done by the Bureau of Mines and others.

I think it would be foolish to consider anything else. May I say also with reference to the burning of coal, that I think the area of research is far beyond that one use in burning coal. In fact, I think the time may come when history will look back on our present age and the burning of coal may be considered barbaric because of its great uses for other sources of chemicals and various types of things. But at the moment, burning is its biggest use.

Senator ALLOTT. That is right. Of course, the chemical opportunities, because of the chemical and molecular construction of coal, are almost unlimited.

Mr. BULLARD. Yes.

Senator ALLOTT. I think that is all, Mr. Chairman.

The CHAIRMAN. Thank you very much for your statement.

Mr. BULLARD. Thank you, sir.

Senator O'MAHONEY. Mr. Chairman, may I make a comment before you call another witness?

The CHAIRMAN. Yes; you may.

Senator O'MAHONEY. I want to call attention to the fact that several years ago the Congress passed a law to authorize the Bureau of Mines to conduct and operate demonstration plants, to make synthetic fuel from shale, coal, and other products, including agricultural products. This project was conducted by the Bureau of Mines with rather good success.

The studies were such as to demonstrate that it was within the possibilities to make this synthetic fuel from shale and from coal at a cost that would enable the product to compete with petroleum as refined in the refineries. But at the beginning of this administration that work was called off. The Bureau of Mines had to abandon the conduct of the demonstration plants.

A strong effort has been made by oil companies which operate in the United States and abroad to gain control of the shale deposits of the United States. I dislike that movement because I conceive it to be a step toward the concentration of economic power in hands so interested in foreign production that they lose sight of the national need to preserve an active domestic industry.

One of the Senators from West Virginia, Jennings Randolph, who was at that time in the House of Representatives, and I sponsored this law which became known as the O'Mahoney-Randolph bill. The manufacture of synthetic fuel from coal, of liquid fuel from coal, offers an opportunity to the coal industry which I think ought to be taken advantage of.

In the present tense situation in the world at large, it is impossible to say when we may not need domestic sources of fuel. It must be remembered that during World War II Hitler was able to operate his military machine only because the Germans had developed a process of making liquid fuel from coal. They couldn't get enough coal; but we have enough. The deposits of coal in the United States are so great they exceed those of any other nation—the known deposits of any other nation—in the world, and our deposits of shale in three States—Colorado, Utah, and Wyoming,—we are told by the geologists, contain more petroleum than the whole known reserves of the Arabian Peninsula.

If there should be a third world war, the Russian submarines will be far more deadly than the submarines of Hitler, and in my judgment it will be utterly impossible for the American oil companies operating in Saudi Arabia to transport that Middle East oil across the Mediterranean Sea and the Atlantic Ocean to this country.

Venezuelan oil couldn't come in during World War II, except by great good luck, because of the successful operations of the Hitler submarines between Venezuela and the Atlantic coast of the United States. As a result of some of these facts back in 1950, this committee initiated a broad study of all energy resources.

The volume which was published as a result of these hearings was in such great demand, not only here in this country but also abroad, that, much to my distress, I have found today that the only surviving copy is the one I have in my own office. I hold it here in my hands.

This is a fuel study proposal, "Hearings before the Committee on Interior and Insular Affairs, U.S. Senate, 81st Congress, 2d session, on Senate Resolution 239, a resolution to investigate available fuel reserves and formulate a national fuel policy of the United States; Senate Joint Resolution 157, a joint resolution to establish a special bipartisan coal commission; S. 3383, a bill to promote interstate commerce in coal, to provide for the conservation of the coal resources of the Nation; to assure an adequate supply of coal, and for other purposes; S. 6, a bill to aid in preventing shortages of petroleum and petroleum products in the United States by promoting the production of synthetic liquid fuels."

In view of the fact, Mr. Chairman, that this volume of hearings is now out of print, and the problem is more acute now than it was then, I want to suggest that I think this committee should ask the Rules Committee and the Joint Committee on Printing to republish this book as a Senate document so that it may be available for this committee and for all others who are interested in this problem.

My request, Mr. Chairman, to have this document reprinted is motivated in part by a desire to have this generation know what the past generation attempted to do with this problem, as well as to make available to all who are interested in it a document which was complimented by leaders of the coal industry as one of the best collections of factual information relating to this industry.

The CHAIRMAN. I think your suggestion is very appropriate, that the book should be republished for the use of the committee and the study that it is making.

Senator O'MAHONEY. Mr. Chairman, I notice here as I thumb through this that in 1951 the Senate passed a resolution which I submitted:

Resolved, That the committee print entitled "Basic Data Relating to Energy Resources," printed for the use of Senate Committee on Interior and Insular Affairs, be printed as a Senate document.

That was Senate Resolution 61. The document was printed. It was Senate Document 8 of the 82d Congress, first session.

I am sure we can take the necessary steps to have that document at least made available again.

I thank you very much.

The CHAIRMAN. I appreciate your suggestion, and I am satisfied that that should be done.

Senator O'MAHONEY. Then I shall take the liberty to proceed with the necessary steps to have it reprinted.

Senator ALLOTT. Mr. Chairman, I would like to address one question to Mr. Bullard.

Mr. Bullard, don't you think that under my bill, the bill I sponsored, S. 1362, that it would be just as easy for the Bureau of Mines to support a project carried on, for example, by Curtiss-Wright, or by a university group of universities, as it would be to do it the other way? Can you see any reason why this couldn't be done?

Mr. BULLARD. I see no reason why it couldn't be done, Senator. It has been the feeling in our organization that the group whose only responsibility and activity was that of research might get around to moving faster. I think there is a need for speed, as I have stated several times in my statement. I am sure that under your bill, as you say, the same thing could be done; yes, sir.

Senator ALLOTT. In other words, we do have a Government pattern now, not only in this field but in many other fields, and particularly I am thinking of medicine and scientific areas, where the Government does, by contract, by grant, farm out specific areas of research, both applied and basic, to various universities throughout the country and various scientific institutions for the purpose of developing a certain type of research in a given field.

I can see no reason why the Bureau of Mines, who, as the Senator has said, have done a rather good job on the petroleum oil shale situation, couldn't operate equally well here. Do you?

Mr. BULLARD. I think that is right. While I certainly don't want to be put in the position of quarreling with the Bureau of Mines, which is not intended, the point must be made that an accelerated program of research has not been carried on by the Bureau of Mines.

Senator ALLOTT. With this directive and the bill which has been sponsored here, and this emphasis on it, I think it could be. It is probably partially the fault of Congress, and maybe partially the fault of industry, that this drive for further development has not occurred. This is what we are all here for, you, too, I know, but it seems to me that this could be done just as well and perhaps better where we have the pattern and the means set up for doing it, by grants and contracts from the Federal Government to develop this area.

Without getting into the situation where you spend half of the money you appropriate for administration and for desks, for offices and so forth, that would be one method.

Mr. BULLARD. That would be largely true with either type; would it not?

Senator ALLOTT. Well, thank you, Mr. Bullard.

The CHAIRMAN. The next witness will be Mr. Harry LaViers.

Mr. LaViers, would you state your full name and the organization you represent?

STATEMENT OF HARRY LaVIERS, CHAIRMAN, COMMITTEE ON RESEARCH, AND PRESIDENT, SOUTH-EAST COAL CO.

Mr. LAVIERS. Mr. Chairman, I am president of the South-East Coal Co., of Paintsville, Ky. I am chairman of the committee on research of the National Coal Association. The National Coal Association represents producers of more than two-thirds of the commercially mined bituminous coal in the United States.

Representatives of National Coal Association have testified before congressional committees on numerous occasions in support of a program of coal research. I consider it a privilege and an honor to appear before your committee today in support of S. 49, as well as H.R. 6596, which has been considered in the House.

The National Coal Association has officially endorsed the establishment of a coal research and development program under an independent Federal agency. The policy of the National Coal Association adopted by the board of directors on behalf of its membership, states:

> Scientific research has made an immeasurable contribution to the economic growth which has made the United States preeminent among the nations of the world. Research should be broadended and intensified to assure further expansion of the Nation's economy and the maintenance of the U.S. leadership. Private industry should continue to play a substanital role in research and make every feasible contribution to the Nation's continued progress. The ultimate in research is beyond the economic capability of some segments of the economy. In furtherance of the national interest and the public welfare, it is incumbent upon the Federal Government to encourage and participate actively in appropriate research in the field of energy resources. An independent Federal agency composed of representatives of industry and Government should be established to aid in developing, coordinating, supervising, and financing an appropriate research program for the extraction, utilization, and consumption of bituminous coal. The program should rely upon existing research facilities to the greatest feasible extent, giving impetus and direction to present research efforts.

The coal industry of the United States is essential to our national welfare. Bituminous coal is basically the fuel of the future. Authorities in and out of government have stated many times that the rapidly expanding energy requirements of our Nation will depend to an important—and increasing—extent upon the abundant reserves of bituminous coal. Our dependency upon bituminous coal has been evidenced in our experiences during two world wars and the Korean conflict.

The idea of a research program for coal is not a new one. More than 4 years ago, the Presidential Advisory Committee on Energy Supplies and Resources Policy reported:

> We recognize that coal is a great national asset and endorse a cooperative study to determine what research and development could be undertaken.

The coal industry today is in almost the same situation in which it found itself in 1954, when this Presidentially appointed committee surveyed the industry's problems.

The maintenance of a vigorous bituminous coal industry is of great importance to a large segment of our population. Not only is it vital to the coal operators and their employees, but also to the thousands of mineworkers and their families who are affected by each and every fluctuation in the economic level of the bituminous coal industry.

Supplementing those who are directely dependent upon the coal industry, are the railroads and the thousands of railroad workers whose jobs depend upon the movement of large quantities of coal by rail transportation. When coal production decreases, train crews are laid off, open-top equipment is sidetracked and the general economy of the railroad workers is adversely affected.

Present conditions are illustrative of the depressed state which can exist, even in periods of uneasy peace such as we have today. If a national emergency should burst upon us, the coal industry would be called on for a sudden and radical rise in production to meet the greatly increased demands of war industry. Coal must be kept fit to answer this challenge. The coal research and development program such as it is proposed in S. 49 would do much to stabilize the industry under all conditions. Such a program is essential to the ability of the coal industry to meet future requirements.

The coal industry has been carrying on limited programs of its own in the field of research and development but, because of the low margin of profits in the industry and the fact that the industry is composed primarily of small units, there is a definite limitation as to the extent of research and development which is financially possible.

The latest available information as to money spent for research, in the year 1955, showed that coal expended $17,382,400. Approximately $2.5 million was spent by commercial coal operators, $1.2 million by captive coal companies, and $3.2 million by manufacturers of coal-mining equipment. The remainder of approximately $10 million was spent by Government agencies, educational institutions, and private research organizations. For an industry of the importance of bituminous coal, this is a very small outlay for research and development.

As previously mentioned, the profits of individual coal companies have been low. The Internal Revenue Service reported that the net profit after taxes of the coal industry in 1956 was $70,473,000. In this year, we had the best production of the last 7 years. Yet, the average net profit is only 14-plus cents per ton. On this kind of a return, it can be readily understood why excess funds are not available for research.

Future estimates of coal requirements by Government and private sources, indicate the almost overwhelming demand which the coal industry must face in its future responsibilities for our Nation's welfare and economy. If these goals are to be accomplished, the coal industry must find ways to increase its productivity, to boost the consumption of coal, and add to the thousands of uses to which coal can be put. To these ends, a coal research and development program is vital.

We should like to call this committee's attention to House Report No. 370 of the 86th Congress, which accompanied H.R. 6596, and was filed by the chairman of the House Committee on Interior and Insular Affairs on May 20, 1959.

We subscribe wholeheartedly to the contents of that report and commend the unanimous recommendations of the House committee that H.R. 6596 be enacted into law. H.R. 6596 is identical, with the exception of a few technical amendments, to provisions of S. 49.

The House report, in finding that a well-planned program of coal research would be beneficial to the coal industry, quoted from a report by the Small Business Administration which stated that the economic depression currently affecting the coal-mining industry is a small business tragedy. The report then points out that the SBA Administrator stated that he strongly favors the objectives of the coal research legislation.

We quote from Assistant Secretary of the Department of Interior, Royce A. Hardy, in a speech before the American Society of Mechanical Engineers, International Petroleum Exposition at Tulsa, Okla., on May 20, 1959.

Mr. Hardy said:

> Over the long term, our Department feels that its major contribution to more efficient development of the Nation's oil and gas resources lies in the field of research and development.

Then Mr. Hardy continued with this statement—

> but we strive to hold research work to projects which otherwise might not be undertaken. We believe that this is the primary function of the Federal Government in the whole research and development field. And furthermore, it seems to us that laboratories supported by public funds better serve the public interest by digging into basic problems which need answers. While this type of effort often involves a higher degree of risk, eventual results will add to our store of scientific knowledge and in the long run pay off in terms of greatly enlarged resources base.

We are sure that Mr. Hardy, in consistency, would subscribe to the same principles for coal research.

As recommended in House Report No. 370, we believe that there is opportunity not only for basic research but also for efforts in the field of practical research for which there is such great need at the present time.

This is probably as well summed up in the House committee report, on page 4, with the following quote:

> H.R. 6596 provides a coal research and development program which, if adequately financed and vigorously conducted, should produce results which will substantially improve the economic position of the coal-mining industry at large and prove highly beneficial to consumers of coal, coal mine workers, distressed coal-mining communities, and to the general public.

We believe that one of the advantages of the proposal contained in S. 49 for an independent research and development commission is that it would utilize existing agencies and organizations to carry on research, while the Commission would be, in the main, administrative and advisory.

It is our hope that your committee will act favorably in its consideration of S. 49 and recommend to the Congress establishment of a Coal Research and Development Commission as an independent agency.

We recognize that before launching a tangible research program, the Commission would necessarily require time to study existing research projects and promising fields for future research activities. The quicker that such a study can be undertaken, the sooner will tangible results be available. Therefore, we believe time is of the essence and

the establishment of a Coal Research and Development Commission, as a congressionally authorized agency, should occur in the near future.

In closing let me again emphasize that present research efforts in coal by industry, by governmental units, and by all other sources, are not adequate to assure the future of this great industry so that the Nation may have a ready supply of energy when required. We need an expanded research program that is well conceived and coordinated. We need such a program now. We believe that S. 49, which we recommend highly, can meet this need.

We urge favorable and immediate action by your body.

May I express to the chairman and to the members of this committee my personal appreciation and thanks of the industry for the very helpful and cooperative attitude which has existed in this committee, not only at this time but in our many dealings with the committee in the past. We feel secure and safe in the knowledge that the coal industry's affairs in Congress are in such able hands.

I thank you.

The CHAIRMAN. Thank you for your statement.

Senator O'Mahoney?

Senator O'MAHONEY. Mr. LaViers, referring to your statement, I call your attention to the fact that you speak of the future requirements of coal and the statements made thereon by Government and private sources. You say that this indicates "the almost overwhelming demand which the coal industry must face in its future responsibilities."

Can you amplify that to some degree and tell us for what particular purposes this huge demand is developing? In other words, I am trying to find out, are you thinking of coal as a fuel to be burned in furnaces and in stoves as in previous decades, or are you thinking of coal to be used in different methods?

Mr. LAVIERS. We are thinking of both facets of it, Senator, particularly in the generation of electric energy. Those demands are increasing rapidly. I think the electrical requirements double about every 10 years. We know that the many existing plants, and the plants that are on the drawing boards and which are being designed today, most of them contemplate the use of coal.

Senator O'MAHONEY. Then do you agree that the future demand for energy source will be so great, assuming that we have a peaceful world, that waterpower alone will not be able to produce the energy that is needed or that will be needed?

Mr. LAVIERS. No, sir; it will not be. In fact, most of the favorable locations for waterpower, taking into consideration the load centers, have already been developed and are in use.

Senator O'MAHONEY. So that even if every site for a power dam is taken advantage of, and all the power projects are built that can be built, there will still be a demand for energy, for electric energy, that will require the use of thermal units with coal as the fuel?

Mr. LAVIERS. Yes, sir. I contemplate that in the future, all of the favorable locations for water development, waterpower development, will be utilized; that other sources of energy will be utilized. But on top of all this there will be a tremendous demand for the energy locked up in coal.

Senator O'MAHONEY. Can you refer this committee to the formal sources of these estimates?

Mr. LaViers. The so-called Paley report is one of the most exhaustive and most extensive. I believe that is about 4 or 5 years old. It went to the various elements of energy available to the economy of our country. It analyzed the availability of this type of energy. On top of this, it found that there would unquestionably be a tremendous demand for coal.

Atomic energy had not been developed to the extent at that time that it has now been developed. Atomic energy, unquestionably, is going to furnish a good deal of the energy in the future. But atomic energy is not a cheap energy. It is an expensive energy. It is almost prohibitive, without Government subsidization of the source of fuel.

It will unquestionably, though, in locations where natural conditions require or make it necessary for that type of power generation, be used extensively. The future energy requirements of this county are estimated by those who study that thing, and I am now thinking particularly of Mr. Sporn, who is president of the American Electric Power Co., and with whom I have served on a few committees.

He has made several public statements. I would be happy to get his estimates, his statements, of the energy requirements of the future.

Senator O'Mahoney. Would you get them and supply them to the committee?

Mr. LaViers. Yes, I certainly would be happy to do so.

(See supplemental statement of Mr. LaViers in the appendix to this document.)

Mr. LaViers. To go back to your first question, we hope that in this research program we will unlock from this storehouse of coal many things that we don't know about today, many uses that we don't know about today. Therefore, I would think that not only will the future requirements be necessary for generation of electrical power, but it could be conceivable that it will be utilized in many, many other ways.

Senator O'Mahoney. There isn't any doubt that coal is a source for all sorts of chemical products?

Mr. LaViers. Yes, sir. That is a proven fact today, and it is being utilized today for all sorts of medicines, perfumes, fungicides, disinfectants, and everything like that. The varied uses of it today is one thing that encourages us to believe that there may be many more which we are just not aware of.

Senator O'Mahoney. You refer to the net profit after taxes which the Internal Revenue Service found for the coal industry producers, $70,473,000. Then you say that in 1957 the coal industry had the best production of the last 7 years. What was that production? Do you recall the figure?

Mr. LaViers. In 1956 it was, Senator.

Senator O'Mahoney. No, you said the next year. It was in 1956 that you had this profit, but then your next sentence is, "in this year," that being the year 1956—is that what you meant?

Mr. LaViers. I see. You are right. "We have the best production in the last 7 years."

Senator O'Mahoney. How much did it amount to in tons?

Mr. LaViers. About 540 million tons, I understand.

Senator O'Mahoney. How does that figure compare with production in previous years?

Mr. LaViers. Well, of course, our peak production, 640 million tons, I believe it was, was during the Second World War. As I say here, the production in that year was the best in the last 7 years.

Senator O'Mahoney. How many employees are there now in the coal industry?

Mr. LaViers. 235,000 employees.

Senator O'Mahoney. What was the peak number of employees?

Mr. LaViers. 740,000.

Senator O'Mahoney. Is it agreed by everybody representing the coal industry that the employment in the coal industry is now only about a third of what it was at its peak?

Mr. LaViers. That is correct.

Senator O'Mahoney. Do you expect it to increase?

Mr. LaViers. Yes, sir; I hope it will increase.

Senator O'Mahoney. To what extent has the use of machinery contributed to the decline in employment?

Mr. LaViers. It has contributed to a large extent to the decrease in employment, Senator.

Senator O'Mahoney. That would seem to be the case. The peak production was 640 million tons, and you are now reduced to 550 million tons, which is a drop of only 90 million tons, whereas employment has been reduced from 740,000 to 235,000, which is a drastic decline.

Mr. LaViers. That is right.

Senator O'Mahoney. Can we hold out, or do we want to hold out, to the mineworkers and their families in the United States that we are opening up a project which would restore the mineworkers to anything like the employment task they had before?

Mr. LaViers. I don't think you can hardly expect it go back up to the peak, but I will tell you what you can expect. By the introduction of this machinery we have been able to hold the price of coal to the consumers at practically what it was 10 years ago.

Senator O'Mahoney. The use of machinery in the mines has reduced the number of accidents, has it not?

Mr. LaViers. It has. And improved methods, improved techniques in taking care of the roof conditions and so forth, have greatly improved the safety conditions in the mines. I started to say that my own mines, I have in them what we think are the latest types of mining equipment that we could find anywhere.

Unquestionably, that will be improved. But the step that was made from the peak of 740,000, where they loaded coal with a hand shovel, to the loading of coal by machinery today where it literally is not touched by hand, may not continue at that same declining rate. We made a tremendous improvement over a relatively short number of years.

If we mine the increased amount of coal which these prophets or economists tell us we are going to mine, it will be necessary to employ more men in the mine, even though we do improve the production per machine, because it will take more people to repair the machines, to operate them, and to do the other necessary occupations that go with them.

I do not anticipate a further decline of any consequence in the employment in the coal mines. On the contrary, I believe if this demand

develops, which we think and which we hope this research program will stimulate, I think we can look forward to increased employment in the coal mines.

Senator O'MAHONEY. You have endorsed S. 49, which sets up a Commission. Section 4(a) of this bill states in the following language the functions and duties of the Commission so far as research is concerned.

> The Commission shall formulate and execute an overall research program, designed but not limited to (1) develop new and more effective uses for coal, (2) improve and expand existing uses for coal, (3) reduce the cost of coal production and distribution, and (4) emphasize those developments in uses for coal of particular value to small coal producers.

Do those objectives fully state the program that you have in mind?

Mr. LAVIERS. They do. They state and express the objectives of my committee. We have studied them. We think, of course, there may be developments in the future where it would be necessary to expand those objectives. But as of today those objectives, those purposes, we think constitute an awfully good start. Of course, it is not perfect, but we think it is a very good start.

Senator O'MAHONEY. What do you think can be done to encourage small coal producers?

Mr. LAVIERS. Well, for one thing, if we can develop cheaper methods, or machines that will go into production that can permit these smaller producers to afford to buy these machines. There is room in the industry for many small units, where maybe just one machine is in operation, as well as the larger units of the industry where there are multiple, maybe 15 or 20 machines in operation. Those machines are very expensive today, and a small producer, unless he has some outside financing, has difficulty keeping up with that.

Senator O'MAHONEY. Do you have any reason to believe that this research—and bear in mind I am asking for information, as I am one of the sponsors of S. 49—have you any reason to believe that the same results could not be obtained as provided in Senator Allott's bill, S. 1362, through the Bureau of Mines?

Mr. LAVIERS. Senator, this program is late. We should have been at it in the industry many years ago. As I said in my statement, the reason we have not been carrying out this program is because the coal industry is not a really profitable industry. We had hardly enough money to keep the development ahead of what it is with the equipment without going into a research program, which is always rather expensive. Our committee spent many hours debating this question and we came to the conclusion that in the interest of speed, in order to try to hurry up this program, that we would like to have it under the direction of a Commission whose sole responsibility was to develop those very four objectives that you stated, and nothing else. I don't mean by that they would not study other processes, but that would be their prime objective.

Senator O'MAHONEY. When you said nothing else, you did not mean to exclude any other objective so long as they related to coal?

Mr. LAVIERS. That is correct. Nor did I mean that the Commission would simply read about coal and nothing else. They must read about competing sources of energy, they must try to evaluate

coal's position in the future economics of the country, they must study the whole world picture, if you please, and try to determine what is the best avenue of approach for a research program.

Senator O'MAHONEY. You would like to get the research started, would you not?

Mr. LAVIERS. Immediately. Immediately. We are late on it. We are 30 or 40 years late on it. The reason that I feel personally so strongly about a separate Commission is that I feel that if that were their sole responsibility they would work harder at it and would probably accomplish quicker results than if it were a part of another department.

I want to emphasize that we have no quarrel with the Bureau of Mines. They are doing wonderful work for us. The safety measures that you spoke about, they have been most helpful.

Senator O'MAHONEY. You must, of course, recognize the fact that Congress is called a spendthrift body every time it passes a bill that requires any new expenditure, and that the creation of a new Commission might run into some roadblocks for that reason. Therefore, may I ask you this: You would not seriously object if the committee should decide that perhaps it would be wiser to proceed with an organization already in existence?

Mr. LAVIERS. Yes, our committee would feel like it would be a mistake to do that. I want to point out, too, that we think this Commission could be a moneysaving approach. We think by concentrated effort and thinking on this program we can save money. We can save the country money by developing new, cheaper, and better methods. We feel rather than it being an additional expense and additional extravagance, it could be a coordinating agency.

Senator O'MAHONEY. But you understand we might run up against a veto.

Mr. LA VIERS. Yes, I understand that, but we might run up against a fault in a mine, too, but we still go on trying to mine.

Senator O'MAHONEY. Well, of course I want to get this coal industry revived.

Mr. LA VIERS. So do I, Senator.

Senator O'MAHONEY. There are huge deposits of coal in the State of Wyoming. My State would benefit tremendously from a revival of the coal industry.

Mr. LA VIERS. That is correct.

Senator O'MAHONEY. I believe that anything Congress can do to stimulate production, to create new employment, to make it possible for private owners to make profit, is good because it will not only create these workmaking jobs, but it will create the income from which taxes can be derived to balance the budget.

Mr. LA VIERS. Yes, sir.

Senator O'MAHONEY. I dislike very much to have the veto power in the White House say one day Congress is a wasteful spender, and then the next day ask for an increased ceiling on the national debt, and increased interest upon the bonds that the Treasury must issue.

Mr. LA VIERS. I can well understand that, Senator, and I share your views in the matter. The committee has deliberated about this, and we still feel that the Bureau of Mines would have a major part in the Commission, but we would like to have the Commission, when

they come to work in the morning, with correspondence on their desks, reports, proposals that would have nothing to do with anything except bituminous coal research and development.

Senator O'MAHONEY. I will say this: I will abandon any further interrogation now with this remark, that you have assumed a task quite as great as the task that the members of this committee have assumed. We do our best, I am sure, to get some legislation through Congress, but you will have to carry the burden on these brickbats that are thrown at our heads when we do anything to improve industry in the United States.

Mr. LA VIERS. I am perfectly willing to take my share of the brickbats, and the committee, I am sure, is also. We have given earnest and long consideration to our position in this matter, and we feel very strongly about it. We see no conflict with the final objectives. We believe this Commission could be a means of saving the country a lot of money.

Senator O'MAHONEY. Thank you very much, sir.

Mr. LA VIERS. Thank you.

The CHAIRMAN. Thank you very much.

Senator Allott?

Senator ALLOTT. I have one or two questions, Mr. Chairman, if I may ask them.

The CHAIRMAN. You may.

Senator ALLOTT. Not that it is real pertinent to the matter, but I think it would be a mistake, Mr. LaViers, to perhaps leave the record in the shape that there is an implication that with this research there might be an expansion of work for coal miners and miner families up to the 740,000, even within a great foreseeable future. I wonder if we could clear this up. Even if the output and use of coal were expanded tremendously, it is true, is it not, as in our own mind, that the methods and machinery now used to mine coal, while it would increase the employment, it is perhaps a little out of reason to believe that in the foreseeable future it is going to bounce up to any figure such as the 740,000 that you mentioned?

Mr. LA VIERS. That is entirely correct, Senator. I hope—I think I did say before that I had no reason to believe it would ever reach that peak again, but that I do think there is an area of increased employment. Let's say 50,000; 50,000 reemployed coal miners today would go a long way to clearing up the troubles.

Senator ALLOTT. I don't think it is necessary to pin it down to any figures. But your testimony left this area open.

Mr. LA VIERS. I am sorry. I did not intend to do that.

Senator ALLOTT. I knew you did not intend to so do.

Now, I would like to ask you one further question: In your closing words, you say:

> Present research efforts in coal by industry, by governmental units, and by other sources are not adequate to assure the future of this great industry. We need an expanded research program that is well conceived and coordinated.

Now, you have stated that the real reason you prefer S. 49 over the S. 1362 is that you want a Commission which has only to look at the bituminous coal problems. You realize that in doing this, and in taking this step, and in asserting this step, you are opening the door for almost every raw materials industry in the United States, includ-

ing lead and zinc as a separate entity, copper as a separate entity, molybdenum, manganese—manganese, particularly, which we need—tantalum, other things, that you are opening the door for each of these raw materials producers to come in and ask this committee to do the same thing?

Mr. LA VIERS. Sir, we feel as if the door has already been opened in the National Aeronautics Commission, in the Atomic Energy Commission. The door was opened when those Commissions were set up. They are no different from what we are proposing. They might have come about by reason of another set of circumstances, but we think the door was already opened, and we are just coming in through the door.

Senator ALLOTT. Mr. La Viers, may I point out that in the agencies that you mentioned the door was opened to a scientific field which is so wide compared with the field herein that you get into the whole area of fuels, you get into the whole area of aerodynamics, meteorology, astronautics, metallurgy, and electronics—just dozens of fields. I don't think that the comparison is fair. In S. 49 you ask for $2 million. How long do you think it would take to set up a separate agency, get an independent Commission going, find and employ the proper technicians, scientists, to do this job?

Mr. LAVIERS. Well, of course I am not able to make a timetable of it, or maybe not too good an estimate. But I think that a separate commission will do it more quickly than anybody else will.

Senator ALLOTT. I think you would agree that you would not even get such a Commission organized in less than a year.

Mr. LAVIERS. No, I think that is true.

Senator ALLOTT. And you would still be searching for scientific personnel to operate it which you would have to subtract from the Bureau of Mines, from private industry, and other places, for a period of 2 or 3 years after that, would you not?

Mr. LAVIERS. Well, it might run a couple of years, yes. But I think in the meantime this Commission can give study to the program.

You see, we say it is coordinating. I think we can well use the existing agencies like the Battelle Institute, the Carnegie Institute, and MIT, and those agencies, we could well farm out a program in which the Commission would coordinate its efforts so we would not have duplication and extravagance.

Senator ALLFTT. May I point out to you, Mr. LaViers, that the Bureau of Mines is already organized and coordinated to do just exactly this thing.

Mr. LAVIERS. And a good many other things.

Senator ALLOTT. And a good many other things, that is correct.

Mr. LAVIERS. I still want to emphasize the single purpose. I do not want to be boring with it, but we feel very strongly on it. We debated these same things, Senator. We are concerned just as you are about it. We debated them for a long time.

Senator ALLOTT. I notice that the statement which you quoted of your organization does not state that it is unequivocally in favor of this one point of approach and this one only.

Mr. LAVIERS. It is the committee's recommendation, Senator.

Senator ALLOTT. The statement that is quoted on page 2 of your prepared statement, which is the policy of the National Coal Association, does not commit itself irrevocably to S. 49.

Mr. LAVIERS. No. It is a much more general statement.

Senator ALLOTT. Thank you.

Senator O'MAHONEY. I did want to say, Senator Allott, to our witness who is very lucid, and who makes it clear to all of us just what he wants, that I do feel, although I am one of the sponsors of S. 49, that if we are going to get results and get them quickly, we had much better follow the theory set forth by Senator Allott, and take the institution that we have instead of seeking to establish a new Commission.

The propaganda against the expenditure of funds for the purpose of developing American resources as been so deep that the congressional committees which appropriate money are condemned, and the Members of Congress condemned.

For example, the President has announced in his budget message that he is against any new starts in the field of water conservation. Yet in spite of that, the House Committee on Appropriations handling the public works appropriation bill, has felt it necessary in the Upper Colorado River Basin, to put in that appropriation bill appropriations in excess of the budget. I think they were utterly and completely justified in doing that, because the waters of the Colorado River have been flowing down to the sea for generations, for centuries, long before the white man came to the Colorado River Basin. This water was being wasted. The proposal to save it now is a proposal to conserve the water supply of a great area of our country, and I think it is fully justified. But the attempt to build is condemned as a spendthrift policy. You will find your Commission condemned in exactly the same way, I fear. That is why I think I ought to take the time to urge you not to be too angry with us if we decide that the Bureau of Mines may be the better approach at the time.

Mr. LAVIERS. Senator, I wouldn't be angry with you, whatever you do. We back home realize you have a very difficult problem up here. I am only trying to present the views of the committee as well as I can and as positively as I can. I certainly have all the sympathy with the dilemma that you find yourself in.

I would like to say that I deeply appreciate your questions and interest in the matter. Do the best you can for us.

Senator ALLOTT. That will be done.

Mr. REDWINE. Mr. Ankeny will be the next witness.

Senator O'MAHONEY (presiding). Would you proceed, Mr. Ankeny, stating your name for the record, please?

STATEMENT OF MARLING J. ANKENY, DIRECTOR, BUREAU OF MINES, DEPARTMENT OF THE INTERIOR

Mr. ANKENY. Mr. Chairman and gentlemen, my name is Marling J. Ankeny. I am Director of the U.S. Bureau of Mines.

I am grateful to this Senate committee for the opportunity to present our views on legislation seeking to provide greater participation on the part of the Federal Government in research and development for the coal industry.

The bills, S. 49 and S. 1362, that you are considering today are based on extensive hearings that were held as a result of House Resolution 400, introduced by Representative Saylor in the 84th Congress.

Hearings were held by a Special Subcommittee on Coal Research of the House of Representatives both in Washington and various locations in the field to determine the attitudes of the public and of the coal industry to the problems that Mr. Saylor's resolution raised.

As a result of the report of the special subcommittee, bills were introduced last year in both the House and Senate to establish a Coal Research and Development Commission. These bills were similar to S. 49 being considered here today.

In the present Congress similar bills to last year's proposals have been introduced. In addition, a number of new bills have been introduced in both Houses, which would increase the Federal participation in the coal research program through increasing the authority and appropriations of the Bureau of Mines. On March 27, 1959, the Department of the Interior reported on S. 49 and S. 1362 and stated that—

> This Department endorses the objectives of the proposed legislation for encouraging and stimulating the production and conservation of coal in the United States through research and development. However, it is the opinion of this Department that these objectives can be accomplished more effectively through greater utilization of existing Government organizations rather than by the creation of a new agency. Existing agencies provide for a more appropriate degree of control by the Congress and the executive branch of the Government over expenditure of Federal funds than is contemplated by the proposed creation of a commission.
>
> Furthermore, it is doubtful whether an independent commission would be effective if divorced from the major executive department having the basic responsibility for research in this field. For these reasons, we are opposed to the creation of an independent commission. We favor the approach proposed by S. 1362.

Our previous testimony before the House special subcommittee and the House committees holding hearings on coal research bills gave many other reasons why, in the interest of economy and efficiency, additional coal research financed by the Federal Government should be placed in the Department of the Interior. I shall not repeat these reasons, since this information is available to your committee.

Proponents of S. 49 have stated that the problems associated with administering research and development are different from other Government programs, and, therefore, a different type agency is necessary to handle them. This particular argument is not valid when applied to the Bureau of Mines. Since the Bureau of Mines was originally established as a research agency, it has maintained this objective and responsibility throughout its 50-year history.

As an indication of the concentration on research in coal alone, the Bureau of Mines has issued more than 4,000 publications on coal research and related activities during this period.

Another reason advanced by proponents of S. 49 for creating a new agency is that coal research would be hampered by administrative restrictions and interdepartmental problems. The Bureau of Mines, in its previous testimony, has stated that, should Congress decide on additional research, it would create a new office within the Bureau which would report directly to the Director. While we do not know of any major interdepartmental problems, or administrative problems at this time, this direct method of dealing with them should insure their speedy solution.

Senator O'MAHONEY. Has this statement of the Bureau of Mines been corroborated by the Secretary of the Interior, Mr. Ankeny?

Mr. ANKENY. You refer to the——

Senator O'MAHONEY. You say:

The Bureau of Mines in its previous testimony, has stated that should Congress decide on additional research, it would create a new office within the Bureau which would report directly to the Director.

That would necessarily entail an increased appropriation to enable you to carry it on.

Mr. ANKENY. Yes, sir.

Senator O'MAHONEY. It would necessarily entail the appointment of new personnel, would it not?

Mr. ANKENY. Or the utilization of present competent personnel within the Bureau.

Senator O'MAHONEY. Yes, but if you were going to have the Bureau devote its attention to this coal research problem, which is the thing that ought to be done, it would be necessary for you to take some of these presently employed persons off the work they are now engaged in and put them to work on it, would it not?

Mr. ANKENY. That is correct, sir.

Senator O'MAHONEY. Then it would be necessary for you to employ new personnel to take over the work that others were doing, would it not?

Mr. ANKENY. Yes, sir.

Senator O'MAHONEY. Has the Department itself endorsed that policy?

Mr. ANKENY. The Department, in its formal report to the Senate, has endorsed the principle that they favor increased research sponsored by the U.S. Government. It must be presumed if that is the case——

Senator O'MAHONEY. But I want to call your attention, Mr. Ankeny, to develop the facts here, to the letter of the Department of the Interior, dated March 27, 1959, and directed to the chairman of this committee, Senator Murray, on S. 1362, which is the bill that utilizes the services of the Bureau of Mines. That ends with this eloquent and foreboding passage:

While we are advised by the Bureau of the Budget that there is no objection to the submission of this report to your committee, we are further advised that in the event of enactment, that Bureau can make no commitment as to the submission of an estimate of appropriations for additional funds for coal research.

There, I suggest to you, sir, is a plain warning from the Department of the Interior that even if we passed the Allott bill, we are not going to get anywhere.

Mr. ANKENY. I would not regard that statement as being so, Senator.

Senator O'MAHONEY. I hope you can show the committee that it is not to be regarded as a threat of a veto. To me it looks very much like it.

Senator ALLOTT. I might suggest, if I may, if the Senator will yield, that Mr. Ankeny, of course, is not the Bureau of the Budget, and that, perhaps, the particular thing might be discussed with other people who are more qualified to speak on the NES. It occurs to me that——

Senator O'MAHONEY. I do not want to involve him in any Interior departmental controversy.

Senator ALLOTT. Not Interior departmental, but budgetary matters. I think what he is speaking to is to the general effect of both bills, and in this respect I think he is doing a very fine job.

Senator O'MAHONEY. With that I completely agree.

Senator ALLOTT. I might say this: I do not regard this as a necessary warning. I do regard it as a statement of fact that as of this time, they cannot commit moneys. I think, perhaps, it is a further indication why S. 1362 should be considered, rather than S. 49.

Senator O'MAHONEY. I say to my good friend and associate from the Rocky Mountain region, that every word which we receive criticizing the Congress for spendthrift policies comes from the administration.

Senator ALLOTT. Not every one, because I have said a few words myself, and I am not a part of the administration.

Senator O'MAHONEY. You come close to being that, sir, having been the administration candidate for the Senate from Colorado.

Senator ALLOTT. I beg your pardon. I was the candidate of the people of Colorado.

Senator O'MAHONEY. I am happy to accept that classification. I am saying this publicly, may I say, solely for the purpose of making it public, because the Republican Senators from the Rocky Mountain region have got to go to bat with us Democrats if we are going to develop the natural resources of our country.

Senator ALLOTT. Yes. And I think the Senator will agree that the Senator from Colorado has been second only to him.

Senator O'MAHONEY. I would not say the Senator from Colorado was second to anybody.

Senator ALLOTT. Second, since I have been in the Congress in developing, for example, the oil shale program, of which the Senator from Wyoming has justly been called the father, and in which I have been so interested myself.

Senator O'MAHONEY. If we are going to make a fight for the development of the coal reserves of the United States, I say the record to date is clear, that we have to take the boxing gloves off and go at it with bare fists.

Senator ALLOTT. Perhaps, they should have been taken off 10 or 15 years ago.

Senator O'MAHONEY. That may be, too. But we do have a record in previous years of having some accomplishment, as, for example, the establishment of the liquid fuels program, under the control of the Bureau of Mines, which has been called off during this administration.

Senator ALLOTT. For many reasons it was called off.

Senator O'MAHONEY. Let me suggest that the Senator from Colorado restrain himself now from defending the administration. Let the administration do that.

Senator ALLOTT. I do not think it needs to, really. I think it defends itself quite adequately.

Senator O'MAHONEY. Let us see if it will defend itself now by supporting this coal research, which the Senator from Colorado so dearly wants, and he will have my support.

Senator ALLOTT. I appreciate that.

Senator O'MAHONEY. Would you proceed, please?

Mr. ANKENY. Another claim by the proponents of an independent commission is that existing agencies have generally confined their programs to technologic research and not to economic and marketing research. The Bureau's economics and statistics have been considered the bible for the coal industry, and, if additional funds were made available to the Bureau for special studies, more work could and would be done in the future on economics, marketing, and statistical research.

Proponents of the legislation for an independent Coal Research and Development Commission have cited precedent for the establishment of an independent Government agency by referring to the National Science Foundation, National Aeronautics and Space Agency, and the Atomic Energy Commission. With the exception of the National Science Foundation, which has special coordinating responsibility for all research by the Federal Government, the other independent agencies all have much broader responsibilities than just research and development.

If a coal commission were being considered and not a coal research commission, the comparison to these other agencies would be proper. Perhaps, the former type commission is needed, but these bills do not provide the wide range of responsibility and would only give research responsibility to this independent agency. Such responsibility already resides in the Bureau of Mines.

We believe that certain statements contained in the House committee reports, supposedly based upon the hearings before the House committee, need clarification. Unfortunately, the Senate did not hold hearings on these bills last year, and this is our first opportunity to testify before the Senate with regard to these several bills to expend more Federal funds for coal research.

We believe that a careful evaluation of the testimony presented in previous hearings in the House of Representatives and in this hearing will support our conviction that the Bureau of Mines should be given the responsibility for any expanded governmental coal research program, rather than an independent commission.

The testimony has clearly shown the unanimity of all interested parties in wanting to enlarge the scope of coal research and development. Given the extra funds envisioned in S. 1362 and the authority for contracting research, I sincerely believe that the Bureau will give the coal owner, the coal miner, and the Nation at large the best value for its money. We have the organization, the technical and administrative talent, the knowledge of the industry, and the connections with academic and industrial research institutes to plan, evaluate, and administer a greatly enlarged program and to insure effective dissemination of the knowledge we all hope will be gained from these labors.

We need not create another Government agency to vie for tax moneys and trained research personnel when we have an organization that was expressly chartered by Congress 50 years ago to take care of the Nation's coal research and development needs.

We can avoid unnecessary duplication of effort and insure maximum return for our research investment by letting one Government agency handle one Government coal research program.

I thank you, gentlemen.

Senator O'MAHONEY. I thank you, Mr. Ankeny. Having had the opportunity of observing the Bureau of Mines over a long period of years, I want to say to you, and to all the members of the Bureau of Mines, that I regard your Bureau as one of the most efficient and productive of the whole Government establishment. I do think that if legislation of this kind is enacted the Bureau of Mines is entirely competent to handle it.

Senator Allott, have you any questions?

Senator ALLOTT. I wish to join in that, too.

I have just one question, Mr. Ankeny, which I think is a pertinent one for the consideration of these bills.

In the last page of your testimony, you say that you have the organization. If S. 49 is considered, the organization has to be built from the bottom; is that not right?

Mr. ANKENY. That is correct, sir.

Senator ALLOTT. You say that you have the technical and administrative talent, and you have explained that you would probably have to find more. But you do already have at great deal of technical and administrative talent there, do you not?

Mr. ANKENY. That is correct, sir.

Senator ALLOTT. You have the knowledge of the industry, and you have that all assembled there. Under S. 49 it would be necessary to reassemble that first at another place, would it not?

Mr. ANKENY. That is correct, sir.

Senator ALLOTT. You say that you have the connections with academic and industrial research institutes to plan, evaluate, and administer a greatly enlarged program, and under S. 49 all this would have to be gathered in, much of it from the Bureau of Mines, and assembled in another place, and then put into motion subsequently?

Mr. ANKENY. That is correct. I would like to add one more observation to that line of questioning, and that is that in the event a Commission is established, we would look forward to losing sizable portions of our scientific and technical personnel to the new Commission.

Senator O'MAHONEY. You would look forward to that?

Mr. ANKENY. We would not look forward with any pleasure, I assure you.

Senator ALLOTT. But you would anticipate that?

Mr. ANKENY. We would anticipate that.

Senator ALLOTT. Thank you, Mr. Ankeny.

Senator O'MAHONEY. Have you made any estimate at all, Mr. Ankeny, of what the cost of this program would me if we enacted the bill?

Mr. ANKENY. In the House hearings we indicated that our own facilities that we now have could stand an increase of approximately $1½ million a year. This is exclusive of any moneys that we would use to contract for research with outside agencies. This program which contemplates contracting research with the outside agencies, would have to be built gradually. I would say our estimate for the first year of operation would be approximately $4 million, and that might be subject to increase from year to year. That is a total of $4 million.

Senator O'MAHONEY. Would this be true, speaking to this same thing to which you are now replying, that there is already available

in the Bureau of Mines a lot of scientific equipment, research equipment, which would have to be reduplicated if independent research were carried on by another Commission?

Mr. ANKENY. If I interpret it——

Senator O'MAHONEY. I am speaking primarily of equipment.

Mr. ANKENY. If I interpret the provisions of the bill that provides for a Commission, they would not set up a research establishment themselves, but would contract research with independent agencies. Unless the programs were very carefully coordinated, these agencies would undoubtedly duplicate some of the facilities which we have.

Senator O'MAHONEY. I call your attention particularly in S. 49 on page 3 to section 4, which says:

> The Commission shall formulate and execute an overall research program, designed but not limited (1) to develop new and more effective uses for coal, improve and expand existing uses for coal—

and it goes on and cites other things. But under that the bill itself does not in any sense limit the Commission to the establishment of a separate research institute.

Mr. ANKENY. But does not the bill enjoin the Commission from doing research themselves that can be done more efficiently and effectively by others?

Senator O'MAHONEY. On page 3, under section 1, subsection (b):

> In carrying out its duties under subsection (a) of this section, the Commission shall (1) conduct research projects—

And then on page 4 it says:

> The Commission shall, itself, conduct research projects only when it is unable on reasonable terms and conditions, to contract—

The point of it is, what are reasonable terms and conditions, in effect, at least in my mind, leaves the door quite open for the Commission, if S. 49 should be passed, to set up and establish separate research laboratories, in which event they could be, to some extent, duplicating the equipment which the Bureau of Mines already has.

Mr. ANKENY. Unless it was, as I say, very closely coordinated with our present research program.

Senator O'MAHONEY. You have examined S. 1362 at length, have you?

Mr. ANKENY. Yes, sir.

Senator O'MAHONEY. Are there any suggestions or modifications with respect to it that you would care to submit?

Mr. ANKENY. No, sir; I have no suggestions.

Senator O'MAHONEY. You have no amendments to offer?

Mr. ANKENY. No, sir.

Senator O'MAHONEY. So far as you are personally concerned, it is acceptable to you?

Mr. ANKENY. That is correct, sir.

Senator O'MAHONEY. Were you here this morning when Senator Dirksen testified?

Mr. ANKENY. Yes, sir.

Senator O'MAHONEY. Senator Dirksen was the original sponsor of S. 49, and I am one of the cosponsors. He testified this morning that he would have no objections if the committee adopted the Allott bill. I am saying this to you because I want any person who may

be in attendance at the hearing to take note of what has been said, and bear in mind what I said to Mr. LaViers, of Kentucky. Don't be too mad at us if we do follow Senator Allott. If you have anything to say about it, you better say it now or forever hold your peace.

I want to call attention to the fact that the report of the Bureau of the Budget on the Dirksen bill, S. 49, which report is dated April 13, 1949, signed by Philip S. Hughes, Assistant Director for Legislative Reference, states:

The Bureau of the Budget recommends against the establishment of an independent Coal Research and Development Commission.

That is a very definite statement. Though Mr. House is an assistant director and not an assistant secretary nor an under secretary, nevertheless I am quite sure that he would not have sent this letter to the chairman of the Committee on Interior and Insular Affairs, if that had not been the definite policy of the Department of the Interior. So we have reason to believe that if a commission were established there would be a veto.

On the other hand, we have reason to believe that perhaps Senator Allott could supply sufficient pressure upon the White House to avoid a veto if we do pass the Allott bill.

The only witnesses who remain to be heard are Senator John Sherman Cooper and Mr. John Whisman, executive director of the Eastern Region Planning Commission.

Is there anybody else present who desires to add anything to what has been said this morning?

There are no volunteer witnesses?

Mr. REDWINE. Mr. Chairman, may the record at this time show that at the conclusion of the hearing this afternoon the record will be held open for 10 days for the filing of additional statements, and the staff given permission to place into the record whatever additional statements come in?

Senator O'MAHONEY. That was the request made by the chairman?

Mr. REDWINE. Yes, sir.

Senator O'MAHONEY. The committee will now stand in recess until 2 o'clock this afternoon, when these two other witnesses will be heard.

Thank you very much, Mr. Ankeny.

(Whereupon, at 12:35 p.m. the committee was recessed, to reconvene at 2 p.m. the same day.)

AFTERNOON SESSION

Senator O'MAHONEY. The only other witness who is to appear at this afternoon's session was unable to reach the city, apparently. He is Mr. Whisman, executive director of the Eastern Region Planning Commission.

And you, Senator Cooper, were the only other witness scheduled for this afternoon, so I am very happy indeed to give you an opportunity to present your statement.

There are two bills before us. One is S. 1362, introduced by Senator Allott of Colorado, and the other is S. 49, introduced by Senator Dirksen of Illinois on behalf of himself and 10 other cosponsors, 5 of whom,

as I recall it, or 6 of whom, are Democrats, and there are 5 Republicans in this group. It is a bipartisan group.

I think before you start your testimony, Senator Cooper, I ought to call your attention to the fact that the Assistant Director of the Bureau of the Budget, Mr. Philip S. Hughes, has filed, under date of April 13, a letter, which concludes with this resounding paragraph:

> The Bureau of the Budget recommends against the establishment of an independent coal research and development commission.

You will therefore bear in mind, Senator, that you have quite a task to swing the Budget over for this bill, if you are testifying in favor of it.

Senator COOPER. I will proceed, then.

STATEMENT OF HON. JOHN SHERMAN COOPER, A U.S. SENATOR FROM THE STATE OF KENTUCKY

Senator COOPER. First, let me say, Mr. Chairman and Senator Moss, that I appreciate very much your courtesy in waiting here for me to testify. It is true that I am a member of the Committee on Public Works, and we have been conducting hearings, at which a number of Kentuckians testified today, and it was necessary and it was also my desire that I be there. But I am very much interested in this bill, and I do want to speak in support of S. 49, a bill which I cosponsored with other Members of the Senate. And I may say I want to speak in support of the principle which is enunicated in the bill introduced by Senator Allott of Colorado, because I think the objective of the bill is much more important than the method of organization by which the research in coal will be undertaken.

My interest in this legislation arises materially and primarily from my interest in my own State, Kentucky. It is the third largest coal producer among the States, and it is estimated that it is the fifth richest State in coal reserves in the Nation.

Coal throughout the years has represented a major source of income to Kentucky miners and mine operators, the railroads, and the business community generally in the eastern Kentucky and western Kentucky coalfields; and even in a larger sense, or not in a larger sense, but in another sense, it is vital to the economy of Kentucky.

Let me say now, though, that if we follow the words of the song, "My Old Kentucky Home," "hard times are knocking at the door" of the Kentucky coal industry. Technological changes in mining and some unfavorable freight rates have affected Kentucky coal specifically, and other competition applicable to the coal industry generally, such as imports of crude and residual oil, has reduced coal markets of Kentucky, as they have those of other coal producing States, to a dangerous point.

As a result, thousands of coal miners in Kentucky are out of work, and their families are living chiefly on surplus food. Mine operators face the loss of their investment, and the total economy in the coal regions is threatened.

I would like to submit, here, for the record, a table showing Kentucky coal production since the year 1954. This is furnished by the Bureau of Mines.

(The table referred to is as follows:)

Kentucky coal production of bituminous coal

	Tons		Tons
1954	56, 964, 408	1957	74, 666, 796
1955	69, 019, 910	1958 (estimate)	64, 100, 000
1956	74, 555, 028		

National coal production of bituminous coal

	Tons		Tons
1954	391, 706, 300	1957	492, 703, 916
1955	464, 633, 408	1958 (estimate)	405, 000, 000
1956	500, 874, 077		

Senator COOPER. It should be pointed out that the development of the Ohio and Green Rivers in west Kentucky has given assistance to the western Kentucky coal field. We are very glad that this is true, but I must say that in eastern Kentucky coal production has gone down.

Taking into account the prevailing situation, whether in Kentucky or other coal producing States, it is imperative that the Congress take serious and positive steps to initiate a program of coal research.

It has been talked about for many years, but unfortunately the Congress, I must say, and the executive branch, have not done it. We have not done this. And it is to the place now where it should be done—where it must be done.

The Bureau of Mines, the Bituminous Coal Institute, and particularly the United Mine Workers of America, have valiantly attempted to do their part in coal research, and they have done more than their part. But if any substantial breakthrough in coal research is to occur, there must be substantial encouragement and funds and organization provided by the Congress.

I may say here that if the committee decides that the organization should be maintained in the Bureau of Mines, I certainly will believe that the committee has studied the bills and has come to what it considers to be a proper conclusion.

I do hope, though, that it will provide the means of securing the necessary organization and personnel and the authorization of funds to make it possible to conduct a broad program of coal research.

The bills that you are considering offer a way.

I would like to say that while I have spoken of Kentucky problems, I know that the problem of coal is not a sectional or State problem. There are other large coal producing States and coal reserves in almost every State of the United States. The problems of the coal industry apply to all of them.

From the standpoint of the national interest, we should ever keep in mind the national dependence on coal as a source of energy. Coal reserves at the present rate of consumption are sufficient for the next 1,900 years, whereas according to current estimates our domestic supply of uranium will be depleted by 1970.

Also from the standpoint of the national interest we should keep in mind the need of coal in time of national emergency. The history of World War I and World War II and the Korean war has testified that coal is crucial to the national defense.

In spite of this demonstrated capacity of coal to meet future energy requirements and to meet the needs of the Nation in national emergencies, it is clear that the domestic industry is now in difficulty.

There have been wholesale conversions to other fuels in recent years, and a growing dependence upon imported residual oil. In time of war, these foreign sources could be cut off and place the country in great danger. And perhaps at that time we would find other domestic fuel resources would be inadequate.

Widespread unemployment and hardship among coal miners has received great publicity throughout the Nation. Production of bituminous coal has slipped to a level in 1956—that was the last total figure I had—below the average of any period in the last 40 years with the exception of the depression years and is now scarcely more than it was 30 years ago, in spite of a vastly increased gross national product, a product that may soon reach $500 billion annually.

Little has been done thus far to correct the basic reason for this situation. We have not been able to do anything very much about the importations of residual oil, although we have made efforts year after year. Many believe that there are unfair competitive advantages accorded other fuels, unfair and preferential in relation to coal, but nothing has been done about it.

And so we are speaking now of a long-range program to find new uses for coal.

Witness after witness before the House Special Subcommittee on Coal Research testified in 1957 there was a desperate need for research in the industry to uncover new uses and production methods for coal. And this committee heard the identical story last year. In 1955, only $17,400,000 was spent on research in the coal industry, but in the petroleum industry research expenditures totaled $145,900,000. And in the chemical industry alone, they amounted to $361,100,000.

Tremendous possibilities in research exist, but they have not yet been sufficiently financed or explored.

I would like to call attention at this point to the Report of the Bureau of Mines and Bituminous Coal Research Institute Information Circular 7754 of 1957, entitled, "Outlook in Research Possibilities for Bituminous Coal." In this report there is quite a comprehensive statement of the work that has been done by the Bituminous Coal Institute, with joint work by the Bureau of Mines, by the coal operators, by the United Mine Workers of America, and they have already opened the vista of the many objectives that could be accomplished by adequate research. And in a very limited investigation they listed 209 areas in which additional experimentation would be of great value to the industry.

I would like also for the committee to study the testimony of the Honorable Harry La Viers, chairman of the Committee on Research, National Coal Commission. It was a very lucid and comprehensive statement of the imperative need for coal research.

No effort to supplant existing research undertakings would be undertaken, I would assume, if this committee acts, but rather the committee would supplement them and coordinate their purposes.

Many research and pilot projects, such as those dealing with synthetic liquids and gasless fuels, have been shown to be too expensive for any single coal company or group of companies, or the United Mine Workers, to undertake, and can be financed only by a research organization such as is proposed in the bills before this committee.

Senator O'MAHONEY. Senator Cooper, is it not a fact that the program of conducting demonstration plants for the manufacture of

liquid fuel from coal, oil shale, and other products was going along successfully under the direction of the Bureau of Mines, but was stopped in the early months of this administration?

Senator COOPER. I must say it is correct. I know that the Congress had made provision for a pilot plant to develop that.

Senator O'MAHONEY. That was being done, and the work was being carried on, and the studies indicated that liquid fuel could be made from coal at a competitive cost. It had not been attained by the Bureau of Mines, to be sure, but there was the opportunity to do it.

Later on, after the Secretary of the Interior brought an end to the study—not the present study but one of his predecessor's—there were studies by the University of Denver, as I recall. That resulted in a report, to which great publicity was given, that the possibilities were very favorable.

Now, since that time the developments in the use of atomic energy have led to the suggestion—it was developed at length at the recent World Oil Congress in New York—that the explosion of atomic bombs in the shale deposits could produce the synthetic fuel.

In any event, the value of coal as a source for liquid fuel has been clearly demonstrated, but the research has been stopped.

Do you not think, as a Senator representing a coal-producing State, that we ought to revive that synthetic fuel program?

Senator COOPER. Absolutely. I think it was an awful mistake when it was stopped. It was more than a pilot program. It was actually a plant attempting to break through.

Senator O'MAHONEY. But the phrase used in the bill—I remember it, because I helped to draft it—was "demonstration plants"—that is what we authorized the Bureau of Mines to establish and to conduct. The plan was worked out in such fashion that an expert from the Bureau was sent to Europe to examine the synthetic plants that were established in Germany during World War II to make liquid fuel from coal, by which the Hitler armies were given the ability to operate their Panzer divisions that crushed France.

All of that was done. All of that was before us. We put an end to it. Do you not think that we stand in danger of having this program denounced as one of these socialistic enterprises that only Democrats think of?

Senator COOPER. I know the Senator, in addition to the real, substantive purposes of his questioning, is also joking with me a little bit; but that is all right. I will just say that it was a mistake for this administration or whoever was responsible, and I know you will say it is this administration, to stop the work of that plant.

Senator O'MAHONEY. It occurs to me, Senator, if I may interrupt you, that the statement presented by the junior Senator from Kentucky had this to say:

> The purpose of S. 49, of which I am a cosponsor, is to encourage and stimulate the production and conservation of coal through an independent Coal Research and Development Commission to be administered by the executive branch of the Government. I think you gentlemen are fully cognizant of the current depressed conditions in the coal industry and will agree that the industry is certainly in need of "encouragement and stimulation."

Now, that is his position, with which you agree and with which I agree. Do you suppose we could prevail upon him to try to prevail upon the White House to allow this synthetic fuel program to be revived?

Senator COOPER. Well, you know, I am sure my colleague is very much interested in the coal industry. I know that from my own talks with him and his work. So I must stand up for my colleague, Senator Morton, and say that I am sure he is interested in the coal industry.

But I would suggest this, if I may: That whatever has been done in the past, now you are the able chairman of this committee.

Senator O'MAHONEY. I am just acting chairman.

Senator COOPER. I know it, but you have great influence and strength and power and ability. I would say I hope you will take this into your hands and not only establish an organization to carry out the research, but that also you will draw a bill—I will be glad to join with you on it if I can—to reestablish the plant to actually carry out experiments in synthetic fuels.

Senator O'MAHONEY. Now, that is a most encouraging offer, and I am glad to accept it.

Senator COOPER. I will join with you.

Senator O'MAHONEY. We shall begin work immediately to try to revive the synthetic fuel program.

Senator COOPER. I think you would agree with me, too, Senator O'Mahoney, that there is ample precedent in the very fact that it was once undertaken. Also there is precedent in another field. We know that plants are being established to develop energy, nuclear energy, for domestic purposes, and that the Government has helped finance those plants, and it is admitted that the cost of the fuel that is being produced cannot in any way compete with coal today. And yet it is done upon the idea that sometime in the future it may be needed.

Certainly it would seem to me that with the great reserves and resources of coal that are available, now available, and inasmuch as we know what can be done with coal—and also there is some question about what our oil reserves may be—we could afford to spend this money to plan for the future, coal research, and then plants which would experiment and develop methods for synthetic fuels from coal.

So if there is any doubt about my position——

Senator O'MAHONEY. I am sure there is no doubt about the Senator's position. In fact, I think the Senator will join me in making the statement that this proposal to carry on through the Bureau of Mines the program of testing out the manufacture of liquid fuel from coal is not in any sense a socialistic enterprise.

Senator COOPER. I think it would be a very wise program, looking to the future needs of this country.

I will not continue much longer, because I think we are in agreement, Senator. But I will just say this: All segments of the coal industry and the United Mine Workers of America are united in supporting this program. It is my belief that they would give impetus to the coal industry; that it would advance new ideas and would help immeasurably to restore the industry to its normal level of activity.

And I will interpolate here and say that if some of these things we have been talking about can be carried out, I think it will help provide for the future needs of this country, both economically and for its national defense. And so I am confident that your committee and you, Senator O'Mahoney, will take the leadership to provide our coal industry with the means for establishing a sound and fruitful research and development program.

Senator O'MAHONEY. Let me say, Senator, that the leadership has already been taken by other members of the committee. I feel, however, that I speak for the whole committee when I say to you that it is unanimous in feeling that some positive steps should be immediately taken to help stimulate the development of coal.

I have introduced legislation for this purpose in the past. Senator Allott has introduced legislation this session confined to the Bureau of Mines alone. And there is this other bill, S. 49, in which you and Senator Morton are sponsors. I am also a sponsor of that bill.

In view of the fact that the Bureau of the Budget has filed its letter condemning S. 49, I think we can account with reasonable probability that this committee will not act on S. 49 but will be more likely to act on S. 1362. But in view of the fact that the letter of the Assistant Secretary of the Interior reporting on this bill, under date of March 27, 1959, closes with this paragraph, which I am about to read, I think it is important for everybody who is interested in this project to restimulate the coal industry in America, to unite forces, to try to persuade the White House and the Bureau of the Budget that there should be no roadblock in the path of the bill.

Senator COOPER. Whatever influence I have, I will be glad to exert.

Senator O'MAHONEY. The Senator has great influence.

This is the paragraph:

> While we are advised by the Bureau of the Budget that there is no objection to the submission of this report to your committee, we are further advised that in the event of enactment the Bureau can make no commitment as to the submission of an estimate of appropriations for additional funds for coal research.

And this, of course, is pointed out after note has been taken that the Interior Department "already has authority to conduct research programs within the Bureau of Mines."

Senator COOPER. I will take one more minute, if I may. I would like to say that as valuable as this undertaking will be, it will necessarily be a long-range program. I think we would agree on that. And perhaps your committee at some time could, or perhaps it already has done so, look at the program which has been drawn up by the coal industry, the coal operators and United Mine Workers of America, which sets out some of the things which should be undertaken now, to give stability to the coal industry.

I do not want to go into great detail, except to say that when I was here in 1954, I at that time met with many members of the coal industry, and they worked out a program. We took it to the Department of the Interior. We did not get too far with it. We finally went to the White House, even, and had a meeting with the President there. And it seemed that perhaps some progress might be made; but recently the leaders in the coal industry, both operators and miners, through their organizations, particularly the United Mine Workers of America, have again formulated a program which would help the coal industry very much, and which I think with support from the committees of Congress could make headway.

I thank you, sir.

Senator O'MAHONEY. What would you think of an amendment to S. 1362 that would be designed to stimulate the resumption by the Department of the Interior of the synthetic fuel program? I would not offer that amendment without consulting with Senator Allott, because this is his bill.

Senator COOPER. Yes. Well, I would like to see it placed in the bill. But I think that is a matter, as you say, you might like to discuss with the other members of the committee. The question is what effect it would have on this bill.

Senator O'MAHONEY. Would there be any objecttion from any other source, do you think?

Senator COOPER. Yes, there would probably be. It might be better to have a separate bill.

Senator O'MAHONEY. Would there be any objection from the United Mine Workers, or from coal operators anywhere? I throw this out at large to those who are gathered in the room. Anybody who dares to answer, let him answer.

Mr. MARK (Jim Mark, international representative, United Mine Workers.) I dare answer. I feel that we would not want to jeopardize the coal research bill with the attitude of Mr. Felix Wormser, whom we did not care too much for, who was instrumental in 1954 in trying to set up something. But I think presently it would be better in a separate bill.

Senator COOPER. That is what I think, Senator, too.

Senator O'MAHONEY. Senator Cooper, we are glad to have had your testimony.

The hearing is closed.

(Whereupon, at 3:25 p.m., the hearing was adjourned.)

APPENDIX

(At the direction of the chairman, the following statements and communications were ordered printed in the record:)

SUPPLEMENTAL STATEMENT OF HARRY LAVIERS, VICE PRESIDENT, SOUTH-EAST COAL CO., PAINTSVILLE, KY., AND CHAIRMAN, COMMITTEE ON RESEARCH, NATIONAL COAL ASSOCIATION

Mr. Chairman and members of the committee, during my appearance before your committee on June 10, I was asked to supply certain supplemental information regarding the future production of the coal industry. In keeping with that request, I submit herewith pertinent facts on that subject.

The President's Materials Policy Commission, in a report dated June 1952 (more familiarly known as the Paley report), made several references to projected production and use of bituminous coal.

In volume I of the five-volume committee report, chapter 16, reference to the energy problem in general is made as follows:

"During the last 25 or 30 years, the consumption of electricity approximately doubled every 10 years—in 1950 it was eight times the 1920 level. Use of petroleum in 1950 was more than 2½ times the 1925 total, water power 4 times, natural gas better than 5 times. Only coal consumption stood at about the same level as in 1925."

Continuing in chapter 16, under a subtitle "The Limited Supply," the following reference is continued:

"The only really abundant reserves are in coal—enough theoretically to last for centuries—but expanding their use presents a cost problem. Present economic and technical conditions would make it costly to shift consumption drastically toward coal away from gas, oil, and hydropower. Indeed, over the last 50 years the movement has been in the other direction: Coal has lost heavily to lower cost competing fuels, and the percentage it supplies of the Nation's total has declined sharply.

"OPPORTUNITIES FOR IMPROVEMENT

"The United States can produce enough energy for all its needs without substantially increasing costs, but in order to do this it will be necessary to exploit fully the inherent flexibilities of the total energy complex: consumers' ability to choose among kinds of fuel, or forms of energy; industry's ability to convert one form or type of energy or fuel into another; regions' ability to draw on various distant sources of fuel or energy."

In the same chapter, a subtitle "The Implication for Coal" has the following to say:

"Further shifts in the energy mix can be expected as the Nation's consumers constantly adjust to the lowest cost combination of energy supplies. The analysis in the chapters which follow suggests that sooner or later the Nation probably will have to rely more upon the coal which it has in abundance. The change will take place gradually as the Nation encounters increasing difficulties in meeting its energy needs from the far less abundant petroleum and gas reserves."

In volume I, chapter 19, under subtitle "Coal—Can Costs Be Cut?" the following significant statement is made:

"Coal has played a declining role in the Nation's total energy supply, falling from 92 percent in 1900 to between 40 and 45 percent in recent years because of strong competition from oil, gas, and waterpower. Use of coal by the steel industry rose one-third between 1925 and 1950 and use by electric utilities, threefold but sharp losses in residential, industrial, and railroad markets caused an absolute decline in total consumption from roughly 600 million tons per year in the midtwenties to just over 500 million tons in recent years."

Continuing, this particular chapter makes a very strong statement in favor of research as follows:

"A stronger competitive position requires rapid technological strides in labor-saving, transportation, and utilization. Organized labor recognizes the importance of such advances, but the coal industry is at a disadvantage because, with few exceptions, it is made up of small companies that are financially unable to invest heavily in research and development. In 1951, private industry and Government together spent less than $1 on coal research for every $5 spent on petroleum research."

Previously we referred to the comments made in the committee's report regarding production of electric energy. In chapter 20 of volume I dealing with electricity, a section subtitled "Thermal Power" makes the following observation:

"Three-quarters of the Nation's current supply of electricity is produced in thermal plants. The thermal power share of the 1975 production will depend on how rapidly hydro potential is developed, but it can hardly be less than three-quarters of the 1975 total and may well be more. This would mean a production of around 1,100 billion kilowatt-hours in that year, according to Commission estimates. For expansion beyond 1975, thermal will have to carry an even heavier share of the load—unless solar or atomic sources are developed to take over a sizable part of the burden."

Chapter 22 of volume I is a summary of this volume and is entitled "Energy for the Nation." In that chapter, the section referring to coal is entitled "The Big Potential." The following is a direct quote from that section:

"In 1947, coal accounted for 49 percent of the Nation's basic energy supply. If future oil and gas supplies are as heavy as shown, coal although greatly increasing in volume can be expected to continue its decline as a percentage of the total, perhaps reaching 33 percent by 1975. Less expansion of gas and oil supplies would give coal a correspondingly larger role to play."

"Sometime beyond 1975, and conceivably before then, coal's percentage share can be expected to begin rising as coal is obliged to take over from petroleum and natural gas a larger share of the burden of increased demand for energy. Meanwhile it probably will pay industry in the years immediately ahead to exploit vigorously the opportunities in coal, thereby relieving the drain on more limited energy resources and conserving them for higher value specialized uses."

Volume II of the committee report bears the title "The Outlook for Key Commodities." Chapter 22 of that volume is entitled "Projection of 1975 Material Demand," and contains a projection of consumer uses of coal. This section is quoted herewith:

"In 1950 the United States consumed about 493 million short tons of coal. This consumption total is distributed among end uses and projected to the year 1975 in table XV.

"TABLE XV.—*Projected United States demand for coal*

End use	1950 consumption (millions of short tons)	Percentage increase projected	Projected consumption about 1975 (millions of short tons)
Bituminous coal:			
Coke ovens	103	52	157
Steel and rolling mills	8	62	13
Railroads [1]	61	−75	15
Residential and commercial: [2]	87	−65	30
Cement mills	8	150	20
Electric utilities	88	240	300
General industrial uses	98	100	196
Anthracite	40	−50	20
Total domestic consumption	493	52	751
Exports [3]	29		64
Total demand for U.S. coal	522	56	815

[1] Class I.
[2] Retail dealer deliveries.
[3] Includes exports of coal and coke; coal used to produce exported products allocated to consuming industries.

Sources: National Coal Association, Bituminous Coal Data, 1950; Bureau of Mines.

"The 103 million tons of coal consumed in coke ovens in 1950 went to make approximately 79 million tons of coke, of which 61 million were used by blast furnaces, 3.5 million by iron foundries, 4 million to make producers gas and water gas, 2.5 million for household fuel, and 8 million for unspecified industrial uses. The use of coke in pig-iron production is expected to expand by 54 percent, the percentage by which U.S. demand for pig iron in 1957 is expected to exceed its 1950 level. Foundry uses of coke are expected to rise by 62 percent, the projected percentage growth in the demand for iron castings. Producer gas and water gas uses are expected to remain constant, their growth being limited by the competition of natural gas and other fuels, and the use of coke as household fuel is expected to decline in about the same proportion (65 percent) as the use of bituminous coal for residential heating (see below). Unspecified industrial uses are anticipated to double along with gross national product but with a 15-percent increase in efficiency. The resultant of these projections gives an estimated demand for 120 million tons of coke in 1975. This represents an increase of 52 percent over 1950 and entails a requirement for 157 million tons of coal.

"The coal used directly in steelmaking is projected to rise by the same percentage (62 percent) as crude steel.

"Railroad use of coal is expected, as noted in the petroleum projection, to fall prey to diesel oil.

"Bituminous coal is expected to hold only about 35 percent of its present market against the incursions of natural gas in residential heating. Anthracite is expected to continue to be displaced by natural gas and oil, losing up to half its present market to them.

"The use of coal in cement mills is assumed to increase in proportion to the increased use of cement. This is estimated to increase by 150 percent over 1950, the use of cement for highways and as a substitute for steel in the form of concrete increasing by enough to counterbalance the slower rise of residential construction.

"Electrical generating capacity is expected to rise by more than 300 percent. A lower figure was chosen for use in the projection of coal because of foreseeable increases of up to 25 percent in the efficiency of coal utilization for power generating purposes. In this projection, coal is assumed to maintain its present relative share in power generation and other industrial uses. This assumption is considered reasonable under the hypothesis that 1950 price relationships remain, but should they change drastically in favor of either oil or coal, a correspondingly altered demand for coal would result.

"General industrial uses of coal are projected to expand in proportion with gross national product, resulting in an anticipated 1975 demand of 196 million tons."

In volume II, chapter 23, which is entitled "Reserves and Potential Resources," the following quotation is from a subchapter entitled "Coal—A Tremendous Resource":

"The coal reserves of the United States are large as compared to reserves of other fuels. Coal-bearing rocks ranging from several hundreds to several thousand feet thick cover approximately 14 percent of the total area of the United States, and in some States contain more than 100 individual coal beds. The total reserves of coal in this tremendous volume of rock have not been accurately measured. Many coal-bearing areas, for example, have not been mapped geologically, and even in the well-mapped areas few coal beds have been explored for more than a mile or so from the outcrops."

In chapter 23, continuing its treatment on potential reserves of coal, the volume has this interesting comment to make regarding the processing of coal for petroleum products:

"Coal: Processes for synthesizing petroleum products from coal were developed to a high degree in Germany prior to the Second World War, and with slight subsidization competed with gasoline imported as such or produced from imported crude oil. Other countries lacking a domestic supply of petroleum also found it economic to utilize coal as a source for petroleum products. In the United States, research on coal to oil synthesis has continued. Increased prices for oil and technologic progress will make it competitive with petroleum."

Commenting on synthetic oils from shale and coal, the report says:

"Another supplement to domestic supply of liquid fuels can be found in the production of oil products from oil shale or from coal. The oil content of known deposits of oil shale in the United States, located principally in Colorado, Wyoming, and Utah, is far in excess of proved crude oil reserves. The Bureau of

Mines estimates the total oil content recoverable at prices ranging up to four times the present price of crude oil to be 500 billion barrels, of which 80 billion barrels in the Mahogany Ledge is presumably recoverable at crude oil prices not much higher than at present. While a major cost of new crude supplies is that of finding the oil, the oil shale is already found. The cost problems of shale oil are those of mining, extraction, refining, and transporting the product to distant markets."

In summary, the following is an interesting comment:

"It accordingly appears that, even if shale and coal are not yet competitive sources of liquid fuel, they are not too far away. A number of oil companies have interests in the shale deposits and are actively investigating their commercial possibilities. Synthetic oil from shale or coal thus sets a ceiling on the possible rise of crude oil prices in the long run.

"Since it is almost certain that shale and coal will eventually provide an important part of our oil supplies, the principal policy issue involved is one of timing—whether to wait for the normal operation of market forces to bring these processes into large-scale operation, or in view of security considerations to speed up their adoption by subsidies at those points where they are already almost commercial."

Chapter 3 of volume III deals with "Coal." In reviewing the "Situation in Brief," the report says:

"Despite a rapid increase in energy demand in the United States in the last 25 years, coal's share of the market has steadily declined. Both less convenient use and—with bulkier handling in transportation—higher prices have caused coal to lose out in many marketplaces to oil and gas. Some markets, however, are expanding and this trend—particularly greater consumption to produce electricity—is likely to continue. While coal's percentage share of the 1975 energy total is likely to be still less than now, actual volume of coal at that date may be 60 percent above present levels. Sometime after that date—whenever the cost relationship shifts and domestic oil and gas production become either too high in cost or too low in volume—coal is expected gradually to take over the heavier part of the energy burden in the United States. Reserves are more than ample.

"The extent and the timing of coal's upward turn will depend importantly on technological developments: better mining and processing methods, cheaper transportation methods, more efficient utilization. Advances in manufacture of gas or liquid fuels from coal, as well as chemicals, could increase consumption."

Recognizing that the largest expansion in coal use will come from thermal generation, the report points out that by 1975 over 300 million tons of coal and lignite (in terms of bituminous coal equivalent) may be required for electric power generation. The report also points out that "total demand for U.S. coal will grow some 60 percent over the next 25 years, from the 1950 level of 522 million tons (including exports) to more than 800 million tons." The report then refers again to synthetic oil production from coal and surmises that if such a project became economic, it might push this demand even higher. Our Nation's utter dependency on coal in times of emergency is emphasized in the report in the following quotation:

"A major war could sharply increase dependence on coal because energy requirements would rise while supplies of other fuels—particularly of imported petroleum—might be reduced. During the Second World War, the demand for coal rose more than 35 percent, from about 480 million tons in 1940 to 650 million tons in 1943 and 1944. A similar or greater increase would have to be anticipated in a future full-scale war."

The report, in commenting on "Reserves and Research," has the following to say:

"The coal reserves of the United States are estimated at 2,500 billion short tons, of which about half may be deemed recoverable with present techniques. The recoverable reserves contain more than 80 percent of the energy of all recoverable mineral fuel reserves. U.S. coal reserves are about 40 percent of the world total—as much as those of the Union of Soviet Socialist Republics and China combined."

Continuing, this section of the report makes this statement with reference to the justification for outside help on coal research:

"The small size and financial resources of most coal companies make it impossible for all but the largest to undertake individual research programs."

Further comments pertaining to the role of research in coal is contained in the following quotation:

"Prospects for further increases in productivity in underground mining are good and will become better as coal markets improve and as operators and investors accordingly gain greater confidence that the long-term trend is upward. Physical difficulties of extraction will grow but can be more than offset by further improvements in methods of extraction and haulage.

"A rising demand for coal will accelerate technologic improvement, and there will be incentives for opening new mines and new coal areas. New mine layouts will be far better adapted than present mines to continuous mining. In old mines, continuous mining machines frequently turn out coal more rapidly than it can be hauled to the surface, and the full value of the machine is not realized. New mines can use belt conveyors in solving this problem. It is possible that by 1975 productivity per man-hour in underground coal mines may be almost tripled, and total productivity in underground and strip mines combined may be more than doubled."

In summarizing the general outlook, the report states: "This Nation's abundant reserves of coal make coal a major long-range source of fuel and raw materials for a wide variety of industries. Sooner or later several major U.S. industries will have to sink their taproots deeply into our coal reserves, as did the railroads earlier."

Another interesting observation made in the report is the following:

"These great coal-using industries, present and potential, have the financial and technical abilities to provide major leadership, along with government and progressive members of the coal industry itself, toward deriving abundantly greater benefits for the Nation, and for other free nations as well, from our rich coal resources. The jobs to be done are evident. They will require intensive technological effort and large capital investment. The job is almost certain to get done someday as the need increases; the big issue is whether it will get along rapidly enough to keep the coal industry from going through another interim period of depression at great cost to the Nation. The challenge to avert such a misfortune rests largely with the several industries concerned."

In an early chapter of volume IV the report says: "The coal industry in the past has been dilatory in the development of improvements in efficient utilization of its product, in general tending to rely on its large consumers for such advances. Hence it was not prepared to meet the competition of the diesel locomotive."

Charting the potentialities in chemical production from coal, this section of the volume reports that while in 1950 only 95 million tons of coal per year were processed for coke and byproducts, by 1957 the consumption for this use would be 428 million tons, which is approximately the total production of coal for all uses in 1958. Further comment on this potential is the following quote from the report:

"A large part of the 1975 amount would go into the production of liquid fuels, aromatics, synthetic ammonia, and synthetic methanol. Whether or not this volume is achieved will depend on the availability of low-price crude oil and natural gas and on the extent of development of liquid fuel from shale. However, the inherent advantages in making a variety of chemical raw materials and chemicals in the coal hydrogenation processes will make for substantial progress in the use of coal in this field regardless of what happens in the fields of petroleum, natural gas, and shale."

Substantiating the findings of the Paley report, two prominent utility authorities in March 1958, speaking before the Southeastern Electric Exchange at Boca Raton, Fla., pointed out that coal will continue to furnish the electric generating needs of our Nation for a long time to come.

Dr. C. Guy Suits, vice president and director of research for the General Electric Co., said: "There is nothing on the technological horizon that gives promise of replacing rotating machinery (steam turbines) for generating electricity—on a big scale or in the near future."

On the role of nuclear or fission power, Dr. Suits said: "The technical feasibility of fusion power has not yet been proven. From our studies we have proposed that practical fusion power should not be anticipated until at least 20 years have passed."

Complementing Dr. Suits' remarks, Mr. Fisher Black, editor and publisher of Electrical World—a trade publication of the electric industry—pointed out that he was "not very bullish" on nuclear energy through 1975 and was "not going wild over fusion—commercial fusion powerplants anywhere from 20 to 50 years distant."

Corroborating Mr. Suits' statement, Mr. Black stated that coal has "the most optimistic reserve picture of all fossil fuels." He then predicted that "not only will the use of coal increase over threefold in the next 18 years, but its share of power generation will rise from 55 percent of annual production in 1957 to at least 66.5 percent in 1975." Predicting that nuclear power will account for at most 4 percent of the total power generated in 1975, Mr. Black said: "No matter what happens in the field of nuclear power, utility thinking must center around coal. With all of our great efforts directed in other directions, I might suggest that we need a little nuclear fallout directed at the coal industry."

Further corroboration of the foregoing statements is contained in the remarks made on April 27, 1959, before the National Coal Policy Conference in Washington by Mr. Philip Sporn, president of the American Electric Power Co. A direct quotation from Mr. Philip Sporn's speech is as follows:

"For some time now I have been studying the question of the likely energy requirements of this country for the period around the middle of the decade of 1970–80, and more recently I have tried to carry these studies to the year 2000. While I realize the difficulties and dangers of such long-term projections and recognize the danger of substantial margins of error in such long-term projections, the directions and order of magnitude indicated by these studies are, I believe, sound. These projections indicate that by 1975 energy consumption by the electric utility industry will account for about 25 percent of the total energy requirements of the United States, and this will increase to 40 percent by the year 2000. At the same time, total energy requirements of the United States will increase 2½ times.

"There are those who mistakenly believe that the future increases in total energy utilization, and even more rapid increases in electric energy use, will be met by nuclear power. I have studied this question very carefully and have come to the conclusion that on the whole this is a mistaken oversimplification. Specifically, it fails to recognize coal's important position in the period of the next 20 years, and even as far ahead as the year 2000.

"In my judgment nuclear power will, by the year 1975, provide no more than the equivalent of 50 million tons of coal for electric power generation. Further, this will constitute virtually the entire nuclear contribution to our energy supply. Coal, on the other hand, will have to supply 475 million tons for electric generation alone and as much as another 425 million tons for metallurgical and other uses. This represents well over a doubling of present coal production and 50 percent more coal than the peak production achieved by the coal industry in 1947."

In summary, the coal industry has before it a major responsibility to the economy of our Nation. However, it must be recognized that these projections are on a long-range basis and anticipate that coal will be able to make the technological advances which will be required if it is to meet these production goals. Such advances will develop only if a constructive and efficient research program is inaugurated now so that the productive machine will be in gear when the future requires the expanded supplies of this most abundant and most efficient of all energy sources.

Statement of John D. Whisman, Executive Director, Eastern Kentucky Regional Planning Commission

My name is John D. Whisman. My position is that of executive director of the Eastern Kentucky Regional Planning Commission, an advisory body to the Governor of the Commonwealth, established under Kentucky statutes, to assist in the physical planning and resource development of a 32-county area in the eastern section of the Commonwealth. The planning commission is attached for administrative and research services to the Kentucky Department of Economic Development, which is charged by law with responsibility for research and promotional activities designed to achieve maximum beneficial utilization of the State's natural resources and to promote its industrial and agriculutral growth.

Nine leading citizens of the area serve without pay as commissioners, appointed to staggered terms on the nonpartisan, nonpolitical commission. They are: B. F. Reed, chairman, Drift; Lawrence Davis, vice chairman, Hazard; S. C. Van Curon, secretary, Harlan; Rexford Blazer, Ashland; Dr. Adron Doran, Morehead; Rev. William M. Huie, Corbin; Harry La Viers, Paintsville; Dr. Alec Spencer, West Liberty; and R. H. Worden, Pikeville.

The 32-eastern Kentucky counties, with which the Eastern Kentucky Commission concerns itself, comprise one-fourth of the land mass of the State, with 23 percent or nearly one-fourth of the State's population. The average per capita income for the area is less than $800, and this of course does not make clear the fact that a great preponderance of individuals in the area subsist on annual cash income of far less than $400.

The depressed status of this area is unquestionable. Moreover, the degree of depression—and the extensive cost in terms of welfare and other State programs—are increasing on a ratio in line with the deepening of the depression within this area. Even now the welfare cost of programs in this area, when reduced to a per capita basis, is more than twice that of the other portions of the State, while the revenue return on a per capita basis in this area is less than half that of the rest of the State.

In the framework of our historically depressed area, the catastrophic floods which struck our section in January and February 1957, proved to be almost a knockout blow. Added to the other ills afflicting our area before and since, the last flood and its aftereffects has pushed eastern Kentucky to the edge of disaster. However, although this flood inflicted $50 million worth of damage, cost human lives, and destroyed invaluable personal property, this same flood has ironically enough, brought some blessings in disguise along with tragedy. For it seemed to awaken many of our people as never before to the fact that our situation is so bad that we must do something.

The commission, after exhaustive study, has reached two basic conclusions. The first is that no program of general development can succeed in any reasonable fashion until certain basic regional developments are provided for—these regional developments involve at least the creation of a regional system of highways, and of a regional system of minimal water control and supply facilities. The commission's second conclusion is that, on the basis of possible success in seeing the development of these regional facilities commenced, there must be formulated a concurrent comprehensive regional program of development effecting all phases of human endeavor in this area.

The Commission is embarking upon this twofold program, a plan of priority development for key regional highways has been formulated and a current study is leading to the formulation of a system of key water control facilities for minimal water development essential as a base for regional overall economic development. We are already in a position to feel greatly encouraged that this planning, allowing for selective—and therefore more effective—development of these minimal regional facilities, will definitely lead to the creation of these essential constructions through the proper agencies of Federal, State, and local government.

We are now preparing our comprehensive regional program. This program will be comprehensive not only horizontally—in that it will cover specialized program action outlines in the categorical fields of forestry, agriculture, mines and minerals, tourism, education, health and welfare, industrial development, community development, spiritual and cultural values, citizen action organization and coordination, Kentucky legislation and Federal legislation—but it will also be comprehensive in the vertical sense in that it will allow "something to do" for all three levels of government, and for private enterprise, private organizations, and private citizens.

The local level portion of the program will outline specific projects most needed in eastern Kentucky's communities; suggest means for local leadership to determine priority projects in most realistic relation to local needs; and provide the best available information and assistance to local people attempting to accomplish such projects.

The program will set forth for the 1960 Kentucky Legislature, an outline of local and regional needs which can be treated by programs of State government. It will specifically propose, and set forth the mechanics for, the calling of an interstate meeting of the Governors of the Appalachian States, for the purpose of forming an Appalachian Development Authority.

The program will take an aggressive position in attempting to define the urge upon the Federal Government its proper role in the treatment of those basic problems which are regional or national or multistate in scope. We feel that it is essential to convince Federal leaders that special attention must be given to those special developmental needs of what we will refer to as "underdeveloped regions," as prerequisites to local or State developments.

I have reviewed the work of the Eastern Kentucky Regional Planning Commission, in order to acquaint you with the fact that this official agency in Kentucky has concentrated intensive and dedicated work to appraising special problems of the depressed economy of eastern Kentucky, and to an attempt to bring forth an orderly program of solutions. I believe that our program is going to be an effective one in eastern Kentucky, and, without question, any progress we make in eastern Kentucky may be transferred almost directly to the treatment of problems throughout the Appalachian region. And, although our program is a comprehensive one which attempts to treat all phases of the economy and which does not fail to take into account that in a historic situation of depression, new solutions, new actions, and new techniques may be called for; it is also true that, in the entire Appalachian region where coal is a principal and very rich resource, no program, no matter how comprehensive, can fail to take into account the effects upon the economy of the status of the coal industry, and the necessity to make improvements in that industry if realistic improvements are to be made in the Appalachian economy.

Among the members of our commission are Mr. B. F. Reed, who is secretary-treasurer of the Turner Elkhorn Coal Co., Mr. Harry LaViers, who is president of the South-East Coal Co., Mr. Lawrence Davis who has long been active in the coal mining industry, and Mr. S. C. Van Curon, who is editor of the Harlan Daily Enterprise, a newspaper operating at the heart of the Harlan coalfield. Although the principal interests of the other commissioners are not immediately related to coal mining, all of them have a direct interest in the fact that coal mining is so closely related to the total economy of the region in which they make their livelihoods, one of them as an oil company president, one an operator of gas wells, a medical doctor, a minister, and a college president. I have discussed S. 1346 carefully with these gentlemen, particularly with Mr. Reed and Mr. La Viers, and my comments here in endorsing and urging the passage of S. 1346 reflects their views.

Within the 32-county area of eastern Kentucky, 9 of the largest population counties are characterized economically as being dependent primarily—and almost entirely—upon the mining of coal and directly related economic activities. Obviously coal is a major factor in the economy of the entire region, and the status of the coal extraction industry directly affects the well-being of the region's 690,000 citizens.

In addition, the same general comment is true of the entire Appalachian region which extends from eastern Kentucky through parts of nine other States, including Pennsylvania, Virginia, Maryland, West Virginia, Tennessee, North Carolina, South Carolina, Alabama, and Georgia. In the Appalachian area of each of these States, similar economic problems persist in the maintenance of conditions of chronic depression. And among those problems which are consistently characteristic of the Appalachian region, a major problem arises constantly from the unique and often exclusive dependence of the region's people upon such gainful employment as is available to them in working with the region's rich coal resource.

I will not discuss here the status of the coal industry nationally, although as a general statement I believe it would be acceptable to say that in the national coal picture, unemployment is generally prevalent in coal mining regions. In many areas of the coal mining industry, people have been left unemployed by advances in coal mechanization, and are now living in conditions as shocking as are found in many of the foreign so-called underdeveloped countries. While it is true that economic trends make essential the dislocation of segments of the population on occasion, and it is true that there is a general trend today from rural sections to urban areas, and that some mining unemployment can be resolved by the transfer of workers to urban areas of heavier employment; it is also a realistic fact that much of the population of the coal mining areas—and particularly of the Appalachian area—will remain in their present home regions throughout their lifetime. Although a considerable outmigration is in effect at present and has continued over the past several years, this is not a healthy outmigration and it is not a solution to regional economic problems. As you probably know, the principal portion of this outmigration force consists of the young adult segment of the population which has the greatest ability to contribute to the good health of the region's economy. Remaining in the region are the very young who must be educated, and the older persons whose productivity is declining, and who, in some cases must be supported partially by the welfare programs, thus rendering even more unhealthy the general economy.

Therefore the means of basic livelihood of many of the people of the Appalachian region, is and will continue to be a problem which must be solved in their lifetime. Although other factors may enter into the solution, a principal factor will continue to be the manner in which coal mining can contribute to the economy. The coal regions should not and must not be abandoned, since they are so rich in a resource which is greatly needed. The real need is to develop the true productivity of these areas and their people. This is almost tantamount to saying that it is necessary to develop the true productivity of coal. By determining those means by which more effective or more efficient energy forms might be released from coal; or by which important and essential material ingredients might be obtained from processing coal, we would have produced a situation in which it would be highly profitable and feasible to locate processing plants for such purposes near the source of the bulk product. With such processing plants located near the coalfields, the effects upon employment and upon the regional economy would be obvious.

Of course the national economy also has a tremendous stake in this outlook, in that with the rapidly advancing demands upon our domestic resources of the defense operation, and the present critical material needs of the space program, the need to increase the potential contribution of the coal resource is also obvious in the national sense.

With this general background then, all of which has pointed up a basic need toward which S. 1846 is directed, I will conclude these remarks with a few general but important points.

I. I will leave each Senator to his own conclusions, based upon other testimony and knowledge, but it seems apparent that no current research programs are moving rapidly enough, or are characterized by the proper magnitude and emphasis, to exercise the possibilities generally recognized by the coal experts to unlock the potentially various and valuable utilizations of coal as a source of materials or energy.

II. It is believed by many knowledgeable and competent persons, some of whom will speak to this committee, that an intensified program of directed research aimed toward determining new usages for coal, would have a higher degree of success predictability. In general support of this kind of statement, one might consider the success of the directed research program administered by the famed Dr. Salk, which has provided us with a prevention for polio, a dreaded disease which once appeared to be implacable. Another example of the effectiveness of intensified directive research would be Manhattan project itself, which produced the atomic bomb and the basis for present age of atomic energy—an achievement of almost cosmic proportions.

To bring such examples right down to today and to the field of coal research we may point to the recent and very exciting development by the Curtiss-Wright Corp.—following a fairly brief but intensified directed research program—in which there has been developed a process by which a highway road binder material, of much more effective qualities than the currently used asphalt materials, can be extracted from coal. The impact of this development alone upon the future of coal can be of considerable economic significance.

III. Although this bill is delimited to a specific area of research—that of mutual application of atomic energy and coal—it is an area so basic to many developments in both fields, as to constitute a worthwhile, and even essential, field within itself. It is interesting to note that this bill comes as much from those interested in atomic energy, as from those who are interested in the greater utilization of coal. Since I am not a technician in either field, I will not dwell on probabilities involved, but it seems apparent and will be established by other witnesses by this committee that the wedding of coal and atomic energy hold a potential of unlimited fruitfulness, and that an intensified research program, in which specific funds, personnel and facilities are devoted exclusively to this expectable achievement, will almost certainly produce results.

IV. I am aware that another current proposal before the Senate, entitled the "Coal Research and Development Act," proposes the establishment of a much more comprehensive program of research for intensive development of greater utilization of coal, and even sets forth a special commission to administer such a program. S. 1346 does not enter into the question involved in this bill—rather it is beyond it. If such an overall research program were established, certainly it would still be wise to set up such a facility as called for in S. 1346 to devote exclusive and intensive research to the future utilization of coal and atomic energy. If, for any reason, the hoped for overall coal resource program were not established, it would still be a matter of prime importance and high

priority, to establish the coal-atomic energy facility, to carry out its own program. Whether the facility calls for in S. 1346 should be administered by the Bureau of Mines, as the bill provides for in its present form, or should be administered by a separate commission directing intensive program of coal research, is a problem which cannot be solved until the basic question of whether to establish such a commission is resolved by the Congress. However, S. 1346 proposes a facility of such immediate importance that its establishment should be brought about as quickly as possible.

For its effect upon the greater utilization of our Nation's coal resource, in relation to national material needs, in relation to defense needs, and in relation to the special needs of the coal region economies, with particular emphasis on the Appalachian region economy; and for its effect upon the needs for an improved energy source, with coal as the basic supply resource, to serve our energy requirements in the period while the commercialization of atomic energy becomes a practical matter, I very strongly urge, in behalf of the Eastern Kentucky Regional Planning Commission and the people of the Appalachian region and all other coal producing areas, the passage of S. 1346 and the implementation of the program of directed research which it provides for.

The people of the eastern Kentucky coalfields, and the leadership of this area, commercial, government, and civic, are all vitally interested in seeing the establishment of a facility for coal-atomic energy research. The location of this facility is not the tantamount feature concerned in its establishment. However, I would like to suggest that there is a relationship often between man's efforts for achievement, and the spirit of the people from whom such efforts come. In this sense, there can be no more fitting location for this coal-atomic energy research facility, than in the eastern mountains of Kentucky, where King Coal has played such a dominant part in the lives and history of the people, where the people are now facing such overwhelming odds in the development of their economy and attempting to derive a livelihood from working with coal, and where the people themselves are at this time displaying such a dynamic potential for seeking solutions to the overwhelming problems that stand between them and a reasonable American standard of living and way of life.

GEOSURVEYS,
Washington, D.C., June 10, 1959.

Senator JAMES E. MURRAY,
U.S. Senate,
Washington, D.C.

DEAR SENATOR MURRAY: Last week I wrote Senator Bible expressing my views on the proposed legislation to establish a coal research and development program. It has been suggested that I also write you. I am pleased to do so and trust you will find my remarks not only deserving of consideration, but also meriting inclusion in the testimony that is submitted to your committee on the proposed legislation.

May I state that I am a geologist, whose first field assignment was in Wyoming 40 years ago this month. I have developed an interest in mineral economics, as well as mineral exploration and development, and have had considerable field experience with the fossil fuels. At present I am a partner in the mineral consulting partnership GeoSurveys, located here in Washington. May I preface the remarks that follow by stating that I endorse legislation that will give financial support to coal research. I am sure this view will be unopposed in your committee and in the hearings you are sponsoring. There is, however, a serious difference of opinion as to the agency that should be charged with the responsibility for this research. H.R. 6596, which has been reported favorably out of committee, would create a new commission. It is my conviction that a new commission is not only unnecessary, but that its creation would be a grave mistake. I submit the following reason:

First of all, it would pirate expert manpower from agencies in which they are now employed and are sorely needed. There are relatively few agencies and not too many experts in coal technology. Chief of them are the Bureau of Mines, several State geological surveys, Bituminous Coal Research, Inc., and laboratories supported by a small number of progressive coal companies. For administration and for any research the new commission may undertake on its own, it must draw upon specialists employed in these several research agencies, and it will thus impair the programs on which they are engaged.

The Bureau of Mines is the leader in coal research, for it has more than 4,000 publications to its credit since its Coal Division was established. It has excellent facilities and a sound program, but it has at no time been adequately supported by appropriations from the Congress. I do not recall a single year in which it has had more than $4 million to spend. It is a tested Government agency that should be given an opportunity to display what it can do if adequately supported.

May I also point out that the Bureau of Mines has good cooperative relationships with every State and private agency engaged in coal research. With these ties it is better capable of letting judicious contracts with these agencies, public and private, than any new commission that may be created. To my knowledge, there is only one person who takes a dim view of the Bureau among all the agencies concerned with the development of coal, and he expresses a minority viewpoint that is not shared by other agencies, by industry, and by labor.

I offer these views as a private individual engaged in private practice, with no Government contracts. Under these circumstances, I believe I look at the needs of the situation dispassionately, and I wish to record with you and your committee my firm conviction that, of the alternate bills under consideration, one designating the Bureau of Mines as the agency to be given authority and new appropriations for coal research and development is the proper one to adopt. If it is your pleasure, I am ready to appear before the Senate committee to argue these points.

Sincerely yours,

HOWARD A. MEYERHOFF.

COAL SEEKS MAGIC FORMULA[1]

WASHINGTON, D.C., March 29, 1959.—"The bills that descend on the homeowner the first of every month are a far less serious threat to his bank account than the kind of bills that hit the hopper when a new Congress convenes," remarks GeoSurveys, commenting on the coal legislation currently under consideration in the House of Representatives. "Early this month the House Subcommittee on Mines and Mining heard arguments on no fewer than 18 bills advocating a stepped-up, Government-supported program of coal research. Although everyone seems to be in favor of research, proponents and witnesses split into two camps, and feeling in certain quarters ran high."

GRIM FACTS

"Once again the coal mining industry is in the dumps. From the catastrophic low of 391.7 million tops in 1954, production increased to 530 million tons in 1956. Consumption tapered off to 490 million in 1957 and sagged to 427 million last year.

"Prospects for 1959 are fair. The industry's best customer, the utilities, is expected to burn 7 percent more coal than in 1958, and the reviving steel mills will consume more than 100 million tons of coking coal. Total demand will approximate 455 million tons, according to a National Coal Association forecast * * *.

"This is still far from good. In fact, the prediction is not even certain. Although it took into account an anticipated drop in oversea exports, it did not expect the West German Government to put a $4.76/ton tariff on imports, which will presumably cut American sales another 9 million tons. The loss may be offset by a more rapid improvement in domestic industry than anyone expects, but none of the forecasts has allowed for competitive losses that will result from the higher prices that must be charged to balance the $2-a-day wage increase* * *."

BASIC PROBLEM

"As usual, a simple panacea for all these ills is being sought, and today the magic word is 'research.' Everyone knows, of course, that coal research has been in progress for many years. The U.S. Bureau of Mines alone has published more than 4,000 research reports since 1910. The Illinois State Geological Survey likewise has an outstanding record for applied research on the coals of the Illinois basin. Bituminous Coal Research, Inc., with the support of industry, has also carried on or sponsored effective programs of investigation and development * * *.

[1] GeoSurveys publication.

"Since Sputnik I, however, something new has been added to the concept of research in the public mind. It has taken on a roseat glow that actually reflects nothing new except the fact of belated popular discovery. A new idea might conceivably call for a new agency to carry it out, but coal research is not new. It's half a century old in the laboratory and a century old in the field. Competent research agencies already exist, hampered only by the feebleness of their financial support.

"Yet 14 of the bills before the House Subcommittee on Mines and Mining propose the creation of a new Government agency—a Coal Research and Development Commission. Only 4 of the 18 bills stipulate that the responsibility for new research be placed where it belongs—on the Secretary of the Interior, whose Bureau of Mines already has research facilities and personnel around which expanded facilities can readily be built. Also available to him is his Geological Survey, which can collaborate on such field activities as may be involved * * *."

COLD CASH

"The need is for continuing financial support for seasoned investigation, not for an expensive outlay for new facilities operated by novices or by pirated personnel. In 1956, only $17.5 million was spent on coal research. More than $11 million of this was contributed by industry. Less than $5 million came from the Federal Government to advance a basic $2.5 billion industry.

"The Bureau of Mines has turned in a fine performance on niggardly appropriations. It should be given a chance to show the taxpayer what it can do with generous support."

STATEMENT OF JULIAN D. CONOVER, EXECUTIVE VICE PRESIDENT, AMERICAN MINING CONGRESS

We greatly appreciate the interest of this committee in developing a broad research program for the coal industry. We sincerely hope that as a result of these hearings that the committee will act favorably on S. 49, which would create an independent coal research commission to encourage and stimulate production and conservation of coal through a comprehensive research and development program.

THE COAL INDUSTRY AND RESEARCH

The coal industry is in serious need of increased research. Practically every phase of the operations can be improved by well directed and executed research effort. This includes the location and determination of reserves, mining, and preparation, and utilization for all purposes.

The Bureau of Mines[1] shows that about $17 million was spent on all forms of coal research in 1955. About $5 million of this came from Federal and State sources and the rest from industry. This total is very small when compared with the petroleum industry's expenditures of about $146 million and the chemical industry's expenditures of $361 million.

The coal industry is sometimes criticized for not spending more on research. On the basis of total selling price for coal it would appear that more money should be available. On the other hand, the margin of profit for practically all the industry has been very narrow, and it is of course, from this margin that research must be financed. In addition, research effort today can be frittered away with little or no result unless it is well organized under competent direction and with adequate equipment. Very few coal companies are large enough to conduct research on the scale needed to be genuinely productive of results.

One answer to this latter problem is industrywide cooperative research. With increased coal production it is probable that contributions to such work can be increased. At the same time, however, individual companies should continue their own programs since this insures the competitive drive created by the benefits to be derived by a single company when its research effort is outstandingly successful.

The coal industry, like the petroleum industry and the chemical industry, is hardheaded and will only spend a limited amount on fundamental research. Neither will it spend money on visionary, long-range projects that will not be successful business enterprises within a measurable number of years. Yet, as to

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[1] Outlook and Reseach Possibilities for Bituminous Coal. Bureau of Mines information circular 7754. May 1956.

given projects in which it can "sink the teeth," like the reduction of mining, handling, and preparation costs, it comes up with effective answers.

There are drawbacks in a competitive approach to research with too narrow a viewpoint. For engineers and scientists to make progress they must have basic facts. Mining engineers must know the geology and physical properties of coal in the ground and of the overlying strata. Preparation engineers need facts and figures on the physical and chemical properties of coal, ash, and rock, combustion engineers need data on ignition and burning characteristics and the properties of the ash, and chemical engineers, considering coal for gasification, liquefaction, or petrochemical processes, need information on the exact details of its chemical composition and the reactions it undergoes. From this viewpoint it is evident that we must continue to collect and expand the basic data on coal. It is in this field that Government research can be particularly helpful, for it is often difficult for industry to justify expenditures for work that promises returns only in the long-range future.

From the industry viewpoint the broad fields for coal research may be listed as follows:

(1) Estimation, location, and characteristics of reserves.
(2) Mining, preparation, and marketing of coal.
(3) Transportation.
(4) Utilization for combustion purposes.
(5) Production of coke and byproducts.
(6) Utilization for liquid fuels and gases.
(7) Utilization for chemicals.
(8) Coal statistics.

The first of these fields, concerning the estimation and determination of the general characteristics of reserves in the broad sense, has always been a governmental function and should continue as such. The coal industry, of course, uses its own geologists and mining engineers to study those factors which have a direct effect on mining and production costs.

The second item, concerned with mining, preparation, and marketing of coal is, in most of its phases, the special province of the industry rather than a field in which the Government can work effectively, or in which it should attempt to work.

The third item, the transportation of coal, involves problems for the coal industry, the coal consumer, and the transportation agencies. In many instances the cost of transportation is a major factor in the price paid by the consumer. Also, in recent years these costs have been rising faster than the cost of mining coal. Attacks have been made on this problem by the industry, to develop cheaper methods. The consumer, as represented by the utility industry, has located plants at the mine mouth and transmitted electric energy instead of coal to reduce transportation costs. This is a problem that is the concern of the industries involved as well as the Government.

The combustion of coal is a problem that is intimately concerned with the equipment used for this purpose. The industry could not hope to investigate all types of combustion equipment. It can and does furnish useful fundamental data. Concerns manufacturing combustion equipment in the larger sizes have been outstandingly successful in the development of entirely automatic combustion equipment, including the utilization of pulverized coal. Steam boiler and furnace manufacturers have demonstrated their competence and progressive attitude in this field.

The fifth item, the production of coke and byproducts, is a specialized field with the properties of the product directly related to their final use. Much of the development work in this field has been carried on by organizations manufacturing coke ovens and by the metallurgical industries. Their ability to recognize and meet their special problems is attested by the rapid expansion of many of these industries in the postwar period.

The coal industry has always taken an active part in supplying the best possible product for coking purposes. This includes the mining and preparation of coal with particularly desirable coking properties. Developments in the field of metallurgical coke have resulted in many instances from cooperation between the coal and metallurgical industries.

The sixth item, the production of liquid fuels and gases from coal, is not now of direct commercial interest in the United States. Research in this field is often too long range and too expensive for the industry to undertake and it is, therefore, a proper field for the Government. This is particularly true because of the general desirability to shift some of the energy burden from oil and gas to coal and because of the strategic importance of liquid fuel supplies.

Certain phases of the problems involved in the production of liquid fuels are of more immediate importance to the coal industry. These include the gasification of coal and some features of the hydrogenation processes. It is desirable to develop direct cooperation between industry and the Government in these fields.

The utilization of coal for chemicals is a field of great potential importance. The most profitable part of this operation will be in producing and marketing the chemicals, rather than producing the coal. The actual amount of coal that would be used for even some of the largest volume chemicals is still not a very great annual tonnage. There is, of course, no reason why organizations in the coal industry cannot enter into the chemical field and indeed this has already been the case in some instances. Chemical companies are also undertaking coal mining operations. This is another field in which the coal industry can render assistance in a fundamental way. It is not in a position to compete with the chemical industry in research in this field. Its best line of endeavor would be to encourage work on coal that would lead to increased utilization.

The eighth item listed—that is, coal statistics—is properly a governmental function and one that has been well handled by the Bureau of Mines.

FUNDS FOR RESEARCH

The previous discussion has outlined the overall fields of research in the coal industry and has indicated how the various industries, over the years, have assumed the responsibility for development in certain fields. In the main the division of these responsibilities is logical and all phases are making good progress.

It is obvious that there is always room for more and faster progress. In our opinion this can be done best by increased effort within the logical research pattern which has already been developed. Various fields of endeavor have been outlined in which the Government, the coal industry, and the other related industries can function effectively and with maximum return for the money expended. These fields should be respected.

The coal industry has not been able and cannot now supply all the funds necessary or desirable for research on this great energy reserve. This has long been recognized and the Government, both Federal and State, has assisted in this effort in a very limited way.

In the coming years coal will carry a very much larger energy burden. There is no evidence that atomic power will be able for some time to contribute more than a small percentage to our energy needs. As a national measure, therefore, the Government would be thoroughly justified in providing greatly increased funds for coal research.

At the present time governmental funds are not available to the coal industry or related industries for financing research. Such programs as conducted by the Atomic Energy Commission, the National Advisory Committee for Aeronautics, and the National Science Foundation have proven highly effective. We believe that one of the best and most effective means for advancing coal technology would be a program of this type devoted to coal.

We respectfully urge your committee to approve legislation creating an independent coal research commission.

U.S. SENATE,
COMMITTEE ON LABOR AND PUBLIC WELFARE,
June 15, 1959.

Hon. JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: I would appreciate it if the enclosed telegram of Mr. George E. Evans, president of the Evans Elkhorn Coal Co. in Wayland, Ky., could be included in the record of the hearings on S. 49.

With kind regards, I am

Sincerely yours,

JOHN SHERMAN COOPER.

WAYLAND, KY., *June 8, 1959.*

Hon. JOHN SHERMAN COOPER,
Senate Office Building, Washington, D.C.:

Relet June 1 concerning hearing scheduled June 10, Committee on Interior and Insular Affairs, Senate bill 49. Regret cannot attend hearing but feel our area will be capably represented by Mr. LaViers and others. We support the position of the National Coal Association committee on coal research. Through a hard hitting independent research commission we believe the distressed sleeping giant of American industry can be awakened and that the establishment of this commission may very well prove to be one of the greatest accomplishments in the history of our industry.

EVANS ELKHORN COAL CO.,
GEORGE E. EVANS, Jr., *President.*

BOONE COUNTY COAL CORP.,
Sharples, W. Va., February 14, 1959.

Hon. JAMES E. MURRAY,
Chairman, Senate Interior and Insular Affairs Committee,
U.S. Senate, Washington, D.C.

DEAR MR. MURRAY: I have been pleased to note that Senate bill 49 and H.R. 130, the Coal Research and Development Act, has been introduced into the present session of Congress. As a resident of West Virginia. depending upon the coal industry for the livelihood of myself, my friends, and my neighbors, I am keenly interested in the successful passage of these bills.

I feel that coal, being our Nation's largest source of energy, deserves full recognition by our Government as a basic need to the welfare and defense of our Nation and, therefore, deserves support in the research necessary to promote its continued production for our Nation's needs. Our Nation's other energy resources, such as oil, natural gas, and the atom, have been favored with economical governmental support in the form of research funds, price supports, and special tax allowances. Coal, on the other hand, has been a self-sufficient industry. However, in the face of ever-increasing competition from industries receiving Government aids, it is now imperative that the coal industry be given help in improving its usefulness to our Nation and its competitive position in our economy by the use of the tools of research. Our country needs a healthy coal industry and our coal industry needs research to restore its health and position in our economy.

As a member of the committee on research of the National Coal Association, I am anxious for the successful passage of the Coal Research and Development Act. Further, as a citizen of West Virginia, I am vitally interested in the progress and betterment of our State and the progress of the coal industry is one of the keys to our State's future. I heartily subscribe to Senate bill 49 and H.R. 130, and request your consideration and effort to have the act made effective.

Yours very truly,

RICHARD F. WESNER, *Vice President.*

THE PITTSBURG AND MIDWAY COAL MINING CO.,
Pittsburg, Kans., June 9, 1959.

Hon. JAMES E. MURRAY,
Chairman of the Senate Committee on Interior and Insular Affairs, U.S. Senate,
Washington D.C.

DEAR SIRS: I am extremely sorry that prior commitments made it impossible for me to appear at the hearings before your committee on Wednesday, June 10, on Senate bill No. 49.

I would appreciate the opportunity to file this letter as a statement of my complete endorsement of the Coal Research and Development Commission as established in Senate bill No. 49. Our company operates coal mines in five States in the Middle West and feels strongly that the enactment of this legislation would add greatly to the future, not only of our company but the coal industry as a whole. I am personally familiar with the policy agreed upon in the National Coal Association Committee on Research and go on record as endorsing the statements to be made by Mr. Harry LaViers, chairman of this committee. Our company feels that the excellent record established by the coal industry during both World Wars proves the advisability of maintaining a strong industry.

Due to the relatively small size and the extreme number (5,600) of coal companies in the United States, it is almost impossible to form an industry research group. We strongly recommend the establishment of a Coal Research and Development Commission as an independent Government agency to promote increased development of this industry.

Respectfully,

EDWIN R. PHELPS.

U.S. SENATE,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
July 10, 1959.

Re S. 1362—a bill dealing with coal research and development.

Hon. JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
U.S. Senate.

DEAR SENATOR: I am enclosing a letter which I have just received from Mr. R. W. Clark, secretary of the Coal Producers Association of Washington State. You will note that Mr. Clark discusses pending coal legislation and strongly endorses the approach incorporated in S. 1362.

It is my understanding that hearings have been held on the measure. If the record is still open, I would appreciate your placing Mr. Clark's letter in it.

I would like to add my endorsement to Mr. Clark's and urge your committee to take early and favorable action on S. 1362.

Thank you for your many courtesies and warm personal regards.

Sincerely,

WARREN G. MAGNUSON, *U.S. Senator.*

COAL PRODUCERS ASSOCIATION OF WASHINGTON,
Seattle, Wash., July 6, 1959.

Hon. WARREN G. MAGNUSON,
U.S. Senate, Washington, D.C.

DEAR SENATOR MAGNUSON: The Senate Interior and Insular Affairs Committee has under consideration the matter of coal research and development. Such a program is both necessary and highly essential to the welfare of the bituminous coal industry. The industry itself is unable to finance completely a program of its own but inasmuch as the entire economy will benefit by the results, it is in the national interest that the Government cooperate in this venture.

Although it is true that some of the larger coal companies have undertaken some research work the efforts have barely scratched the surface of the potential in any one of a number of directions. Much needed additional work remains to be done in the area of low temperature carbonization of coal for the thousands of byproducts derived therefrom, in the newly discovered application of coal for road materials and for the further experimentation and development of the coal-fired gas turbine, to mention a few.

There can be no argument on the advisability of such a program although there seems to be some difference of opinion as to the proper approach to the problem. One school of thought has advocated an independent agency of the Federal Government, a Coal Research and Development Commission, composed of three members to be appointed by the President. This is the intent of Senate bill S. 49.

The other alternative to be considered—and in our judgment the more reasonable—is Senate bill S. 1362 which would place the responsibility for the program with the Bureau of Mines. The latter plan has much to commend it. The Bureau of Mines already has within it the framework for the facilities, the personnel, and the know-how. This in itself should reflect an economy in administrative costs and an elimination of some duplication of efforts. The Bureau, in the past, has conducted considerable research in coal with beneficial results. In our opinion the greatest amount of progress and good will be accomplished if the Bureau of Mines is empowered to operate in an expanded and more diversified research and development program.

We, therefore, urge you to lend your unqualified support to Senate bill S. 1362 which will place the responsibility for research under the Bureau of Mines where such effort logically and rightly belongs.

With warm personal regards, I am,

Sincerely yours,

R. W. CLARK, *Secretary.*

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